

**APPENDIX J1**  
**SOIL BORING AND TEST PIT LOGS FOR RI**

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**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS**

SITE	STATION	PARCEL	COMMENT
IR01/21	IR01B001	E	No soil samples were analyzed
IR01/21	IR01B003A	E	
IR01/21	IR01B004	E	
IR01/21	IR01B005A	E	
IR01/21	IR01B006	E	
IR01/21	IR01B011	E	
IR01/21	IR01B012	E	
IR01/21	IR01B013	E	
IR01/21	IR01B015	E	
IR01/21	IR01B017A	E	
IR01/21	IR01B018G	E	Drilling refusal at 14 feet bgs
IR01/21	IR01B019	E	
IR01/21	IR01B021	E	
IR01/21	IR01B021A	E	Drilling refusal at 7.5 feet bgs
IR01/21	IR01B023	E	
IR01/21	IR01B024	E	
IR01/21	IR01B025	E	No soil samples were analyzed
IR01/21	IR01B028	E	
IR01/21	IR01B029	E	
IR01/21	IR01B030	E	
IR01/21	IR01B031A	E	
IR01/21	IR01B032	E	
IR01/21	IR01B033	E	
IR01/21	IR01B034	E	
IR01/21	IR01B035	E	
IR01/21	IR01B036	E	No soil samples were analyzed
IR01/21	IR01B039	E	
IR01/21	IR01B040	E	
IR01/21	IR01B041	E	
IR01/21	IR01B045	E	
IR01/21	IR01B046	E	No soil samples were analyzed
IR01/21	IR01B048A	E	Drilling refusal at 8.0 feet bgs
IR01/21	IR01B049	E	
IR01/21	IR01B050	E	
IR01/21	IR01B052	E	No soil samples were analyzed
IR01/21	IR01B055	E	
IR01/21	IR01B056	E	
IR01/21	IR01B060	E	
IR01/21	IR01B061	E	
IR01/21	IR01B064	E	
IR01/21	IR01B273	E	
IR01/21	IR01B274	E	
IR01/21	IR01B275	E	
IR01/21	IR01B364	E	
IR01/21	IR01B365	E	
IR01/21	IR02B249	E	
IR01/21	IR72B034	E	Drilling refusal at 4.5 feet bgs
IR01/21	IR72B035	E	Drilling refusal at 3.0 feet bgs
IR01/21	IR72B039	E	
IR01/21	IR76B002	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR01/21	IR01MW02B	E	
IR01/21	IR01MW03A	E	
IR01/21	IR01MW05A	E	
IR01/21	IR01MW07A	E	
IR01/21	IR01MW16A	E	
IR01/21	IR01MW17B	E	
IR01/21	IR01MW18A	E	
IR01/21	IR01MW26B	E	
IR01/21	IR01MW31A	E	
IR01/21	IR01MW38A	E	
IR01/21	IR01MW42A	E	
IR01/21	IR01MW43A	E	
IR01/21	IR01MW44A	E	
IR01/21	IR01MW47B	E	
IR01/21	IR01MW48A	E	
IR01/21	IR01MW53B	E	
IR01/21	IR01MW58A	E	
IR01/21	IR01MW62A	E	
IR01/21	IR01MW63A	E	
IR01/21	IR01MW367A	E	
IR01/21	IR01MW400A	E	No soil samples were analyzed
IR01/21	IR01MW401A	E	No soil samples were analyzed
IR01/21	IR01MW402A	E	No soil samples were analyzed
IR01/21	IR01MW403A	E	No soil samples were analyzed
IR01/21	IR01MWI-3	E	No soil samples were analyzed
IR01/21	IR01MWI-5	E	No soil samples were analyzed
IR01/21	IR01MWI-6	E	No soil samples were analyzed
IR01/21	IR01MWI-7	E	No soil samples were analyzed
IR01/21	IR01MWI-8	E	No soil samples were analyzed
IR01/21	IR01MWI-9	E	No soil samples were analyzed
IR01/21	IR01P03A	E	Soil samples were collected for physical testing only
IR01/21	IR01P03AA	E	No soil samples were analyzed
IR01/21	IR01P03AB	E	No soil samples were analyzed
IR01/21	IR01P18AB	E	Drilling refusal at 15 feet bgs; no soil samples were analyzed
IR01/21	IR01T001	E	No soil samples were analyzed
IR01/21	IR01T02A	E	No soil samples were analyzed
IR01/21	IR01T02B	E	No soil samples were analyzed
IR01/21	IR01T03A	E	No soil samples were analyzed
IR01/21	IR01T03B	E	No soil samples were analyzed
IR01/21	IR01T04A	E	No soil samples were analyzed
IR01/21	IR01T04B	E	No soil samples were analyzed
IR01/21	IR01TA01B	E	
IR01/21	IR01TA02B	E	
IR01/21	IR01TA05A	E	
IR01/21	IR01TA05B	E	No soil samples were analyzed
IR01/21	IR01TA07A	E	
IR01/21	IR01TA07D	E	No soil samples were analyzed
IR01/21	IR01TA08A	E	No soil samples were analyzed
IR01/21	IR01TA08B	E	
IR01/21	IR02TA09A	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR01/21	IR02TA09B	E	No soil samples were analyzed
IR01/21	IR02TA10A	E	
IR01/21	IR02TA10B	E	No soil samples were analyzed
IR02NW	IR02B118	E	
IR02NW	IR02B119	E	
IR02NW	IR02B120	E	
IR02NW	IR02B122	E	
IR02NW	IR02B123	E	
IR02NW	IR02B124	E	
IR02NW	IR02B125	E	
IR02NW	IR02B134	E	
IR02NW	IR02B135	E	
IR02NW	IR02B142	E	
IR02NW	IR02B151	E	
IR02NW	IR02B250	E	
IR02NW	IR02B251	E	
IR02NW	IR02B252	E	No soil samples were analyzed
IR02NW	IR02B252A	E	
IR02NW	IR02B253	E	No soil samples were analyzed
IR02NW	IR02B253E	E	Drilling refusal at 8.0 feet bgs
IR02NW	IR02B256	E	
IR02NW	IR02B288	E	
IR02NW	IR02B361	E	
IR02NW	IR02MW126A	E	
IR02NW	IR02MW127B	E	
IR02NW	IR02MW141A	E	
IR02NW	IR02MW372A	E	
IR02NW	IR02MW373A	E	
IR02NW	IR02MWB-3	E	No soil samples were analyzed
IR02NW	IR02P126AA	E	No soil samples were analyzed
IR02NW	IR02P126AB	E	Soil samples were collected for physical testing only
IR02NW	IR02T05A	E	No soil samples were analyzed
IR02NW	IR02T05B	E	No soil samples were analyzed
IR02NW	IR02T05C	E	No soil samples were analyzed
IR02NW	IR02T06C	E	No soil samples were analyzed
IR02NW	IR02TA15A	E	
IR02NW	IR02TA15B	E	No soil samples were analyzed
IR02NW	IR02TA16A	E	
IR02NW	IR02TA16B	E	No soil samples were analyzed
IR02NW	IR02TA17A	E	No soil samples were analyzed
IR02NW	IR02TA17B	E	
IR02NW	IR02TA18A	E	
IR02NW	IR02TA18B	E	
IR02NW	IR02TA19A	E	No soil samples were analyzed
IR02NW	IR02TA19B	E	
IR02NW	IR02TA19C	E	
IR02NW	IR02TA20A	E	No soil samples were analyzed
IR02NW	IR02TA21A	E	
IR02NW	IR02TA22A	E	No soil samples were analyzed
IR02NW	IR02TA23A	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR02NW	IR02TA23B	E	
IR02C	IR02B088	E	
IR02C	IR02B089	E	
IR02C	IR02B090	E	
IR02C	IR02B092	E	
IR02C	IR02B093	E	
IR02C	IR02B095	E	No soil samples were analyzed
IR02C	IR02B095A	E	Drilling refusal at 47 feet bgs
IR02C	IR02B096	E	
IR02C	IR02B100	E	
IR02C	IR02B103	E	
IR02C	IR02B104	E	No soil samples were analyzed
IR02C	IR02B104D	E	Drilling refusal at 47 feet bgs
IR02C	IR02B105	E	
IR02C	IR02B108	E	No soil samples were analyzed
IR02C	IR02B108A	E	Drilling refusal at 36.5 feet bgs
IR02C	IR02B109	E	
IR02C	IR02B111	E	
IR02C	IR02B112	E	
IR02C	IR02B113	E	
IR02C	IR02B143	E	
IR02C	IR02B145	E	
IR02C	IR02B150	E	
IR02C	IR02B240	E	No soil samples were analyzed
IR02C	IR02B289	E	
IR02C	IR02B290	E	
IR02C	IR02B291	E	
IR02C	IR02B376	E	
IR02C	IR02B377	E	
IR02C	IR02MW89A	E	
IR02C	IR02MW93A	E	No soil samples were analyzed
IR02C	IR02MW101A1	E	No soil samples were analyzed
IR02C	IR02MW101A2	E	
IR02C	IR02MW114A1	E	No soil samples were analyzed
IR02C	IR02MW114A2	E	Drilling refusal at 41.5 feet bgs
IR02C	IR02MW114A3	E	
IR02C	IR02MW147A	E	
IR02C	IR02MW149A	E	
IR02C	IR02MW298A	E	
IR02C	IR02MWB-1	E	No soil samples were analyzed
IR02C	IR02MWB-2	E	No soil samples were analyzed
IR02C	IR02MWC5-W	E	No soil samples were analyzed
IR02C	PA39MW03A	E	
IR02C	IR02P93AA	E	No soil samples were analyzed
IR02C	IR02P93AB	E	No soil samples were analyzed
IR02C	IR02T011	E	No soil samples were analyzed
IR02C	IR02T013	E	No soil samples were analyzed
IR02C	IR02T06A	E	No soil samples were analyzed
IR02C	IR02T06B	E	No soil samples were analyzed
IR02C	IR02T07A	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR02C	IR02T07B	E	No soil samples were analyzed
IR02C	IR02T07C	E	No soil samples were analyzed
IR02C	IR02T08A	E	No soil samples were analyzed
IR02C	IR02T08B	E	No soil samples were analyzed
IR02C	IR02T08C	E	No soil samples were analyzed
IR02C	IR02T12A	E	No soil samples were analyzed
IR02C	IR02T12B	E	No soil samples were analyzed
IR02C	IR02TA13A	E	No soil samples were analyzed
IR02C	IR02TA13B	E	No soil samples were analyzed
IR02C	IR02TA14A	E	No soil samples were analyzed
IR02C	IR02TA14B	E	
IR02C	IR02TA24A	E	No soil samples were analyzed
IR02C	IR02TA24B	E	No soil samples were analyzed
IR02C	IR02TA25A	E	No soil samples were analyzed
IR02C	IR02TA25B	E	
IR02C	IR02TA25C	E	No soil samples were analyzed
IR02C	IR02TA26A	E	
IR02C	IR02TA26B	E	No soil samples were analyzed
IR02C	IR02TA27A	E	No soil samples were analyzed
IR02C	IR02TA27B	E	No soil samples were analyzed
IR02C	IR02TA28A	E	No soil samples were analyzed
IR02C	IR02TA28B	E	No soil samples were analyzed
IR02C	IR02TA29A	E	
IR02C	IR02TA29B	E	No soil samples were analyzed
IR02C	IR02TA30A	E	No soil samples were analyzed
IR02C	IR02TA30B	E	
IR02C	IR02TA31A	E	No soil samples were analyzed
IR02C	IR02TA31B	E	
IR02C	IR02TA32A	E	No soil samples were analyzed
IR02C	IR02TA32B	E	
IR02C	IR02TA33A	E	No soil samples were analyzed
IR02C	IR02TA33B	E	No soil samples were analyzed
IR02C	IR02TA54A	E	No soil samples were analyzed
IR02C	IR02TA54B	E	No soil samples were analyzed
IR02C	IR02TA54C	E	No soil samples were analyzed
IR02C	IR02TA55A	E	No soil samples were analyzed
IR02C	IR02TA55B	E	
IR02C	IR02TA56A	E	
IR02C	IR02TA56B	E	
IR02C	IR02TA57A	E	
IR02C	IR02TA57B	E	
IR02C	IR02TA57C	E	No soil samples were analyzed
IR02SE	IR02B181	E	
IR02SE	IR02B182	E	
IR02SE	IR02B184	E	
IR02SE	IR02B185	E	
IR02SE	IR02B186	E	
IR02SE	IR02B187	E	
IR02SE	IR02B192	E	
IR02SE	IR02B193	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR02SE	IR02B195	E	Drilling refusal at 28.5 feet bgs
IR02SE	IR02B197	E	Drilling refusal at 26 feet bgs
IR02SE	IR02B198	E	
IR02SE	IR02B199	E	
IR02SE	IR02B200	E	
IR02SE	IR02B200A	E	No soil samples were analyzed
IR02SE	IR02B200B	E	Drilling refusal at 9.5 feet bgs; no soil samples were analyzed
IR02SE	IR02B201	E	
IR02SE	IR02B201A	E	No soil samples were analyzed
IR02SE	IR02B201B	E	No soil samples were analyzed
IR02SE	IR02B202	E	
IR02SE	IR02B202A	E	Drilling refusal at 7.5 feet bgs; no soil samples were analyzed
IR02SE	IR02B202B	E	No soil samples were analyzed
IR02SE	IR02B203	E	
IR02SE	IR02B204A	E	Drilling refusal at 9.0 feet bgs
IR02SE	IR02B204D	E	
IR02SE	IR02B205	E	
IR02SE	IR02B207	E	
IR02SE	IR02B294	E	
IR02SE	IR02B295	E	
IR02SE	IR02B296	E	
IR02SE	IR02B297	E	
IR02SE	IR02B354	E	
IR02SE	IR02B355	E	
IR02SE	IR02B356	E	
IR02SE	IR02B357	E	
IR02SE	IR02B358	E	
IR02SE	IR02B359	E	
IR02SE	IR02B360	E	
IR02SE	IR02B369	E	
IR02SE	IR02B369A	E	
IR02SE	IR02B370	E	
IR02SE	IR02B371	E	
IR02SE	IR02B374	E	
IR02SE	IR02B375	E	
IR02SE	IR02MW175A	E	
IR02SE	IR02MW179A	E	
IR02SE	IR02MW183A	E	
IR02SE	IR02MW196A	E	
IR02SE	IR02MW206A1	E	No soil samples were analyzed
IR02SE	IR02MW206A2	E	
IR02SE	IR02MW209A	E	
IR02SE	IR02MW300A	E	
IR02SE	IR02TA42A	E	
IR02SE	IR02TA42B	E	No soil samples were analyzed
IR02SE	IR02TA42C	E	No soil samples were analyzed
IR02SE	IR02TA43A	E	
IR02SE	IR02TA43B	E	No soil samples were analyzed
IR02SE	IR02TA44A	E	
IR02SE	IR02TA45A	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR02SE	IR02TA45B	E	
IR02SE	IR02TA46A	E	
IR02SE	IR02TA46B	E	
IR02SE	IR02TA61A	E	
IR02SE	IR02TA61B	E	
IR02SE	IR02TA62A	E	No soil samples were analyzed
IR02SE	IR02TA62B	E	No soil samples were analyzed
IR02SE	IR02TA63A	E	No soil samples were analyzed
IR02SE	IR02TA63B	E	No soil samples were analyzed
IR02SE	PA47TA01	E	
IR02SE	PA47TA03	E	
IR03	IR02B098	E	
IR03	IR02B098D	E	Drilling refusal at 7.0 feet bgs
IR03	IR02B166	E	
IR03	IR02B166A	E	
IR03	IR02B170	E	
IR03	IR02B292	E	
IR03	IR02B293	E	
IR03	IR02B299	E	
IR03	IR03B216	E	
IR03	IR03B217	E	
IR03	IR03B219	E	
IR03	IR03B219B	E	Drilling refusal at 5.0 feet bgs
IR03	IR03B219C	E	Drilling refusal at 6.5 feet bgs
IR03	IR03B220	E	
IR03	IR03B221	E	
IR03	IR03B223	E	
IR03	IR03B227	E	No soil samples were analyzed
IR03	IR03B228A	E	
IR03	IR03B337	E	
IR03	IR03B338	E	
IR03	IR03B339	E	
IR03	IR03B340	E	
IR03	IR03B341	E	
IR03	IR02MW97A	E	
IR03	IR02MW146A	E	
IR03	IR02MW173A	E	
IR03	IR02MW210B	E	
IR03	IR02MW299A	E	No soil samples were analyzed
IR03	IR02MWB-5	E	No soil samples were analyzed
IR03	IR03MW218A1	E	Drilling refusal at 14 feet bgs; no soil samples were analyzed
IR03	IR03MW218A2	E	No soil samples were analyzed
IR03	IR03MW218A3	E	
IR03	IR03MW224A	E	
IR03	IR03MW225A	E	
IR03	IR03MW226A	E	
IR03	IR03MW228B	E	
IR03	IR03MW342A	E	
IR03	IR03MW369A	E	
IR03	IR03MW370A	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR03	IR03MW371A	E	
IR03	IR03MWO-1	E	
IR03	IR03MWO-2	E	
IR03	IR03MWO-3	E	
IR03	IR02P97AA	E	
IR03	IR02P97AB	E	Soil samples collected for physical testing only
IR03	IR02T009	E	No soil samples were analyzed
IR03	IR02T10A	E	No soil samples were analyzed
IR03	IR02T10B	E	No soil samples were analyzed
IR03	IR02T20A	E	No soil samples were analyzed
IR03	IR02T20B	E	No soil samples were analyzed
IR03	IR02T21A	E	No soil samples were analyzed
IR03	IR02T21B	E	No soil samples were analyzed
IR03	IR02TA34A	E	
IR03	IR02TA34B	E	No soil samples were analyzed
IR03	IR02TA35A	E	
IR03	IR02TA35B	E	
IR03	IR02TA36A	E	No soil samples were analyzed
IR03	IR02TA36B	E	No soil samples were analyzed
IR03	IR02TA37A	E	No soil samples were analyzed
IR03	IR02TA37B	E	
IR03	IR02TA38A	E	No soil samples were analyzed
IR03	IR02TA38B	E	No soil samples were analyzed
IR03	IR02TA39A	E	No soil samples were analyzed
IR03	IR02TA39B	E	No soil samples were analyzed
IR03	IR02TA39C	E	
IR03	IR02TA40A	E	
IR03	IR02TA40B	E	
IR03	IR02TA41A	E	
IR03	IR02TA58A	E	
IR03	IR02TA59A	E	No soil samples were analyzed
IR03	IR02TA60A	E	No soil samples were analyzed
IR03	IR03TA47A	E	No soil samples were analyzed
IR03	IR03TA47B	E	No soil samples were analyzed
IR03	IR03TA47C	E	
IR03	IR03TA47D	E	
IR03	IR03TA47E	E	
IR03	IR03TA48A	E	No soil samples were analyzed
IR03	IR03TA48B	E	
IR03	IR03TA49A	E	
IR03	IR03TA50A	E	
IR03	IR03TA51A	E	
IR03	IR03TA51B	E	
IR03	IR03TA52A	E	No soil samples were analyzed
IR03	IR03TA52B	E	No soil samples were analyzed
IR03	IR03TA52C	E	
IR03	IR03TA52D	E	No soil samples were analyzed
IR03	IR03TA52E	E	
IR03	IR03TA52F	E	
IR03	IR03TA52G	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR03	IR03TA53A	E	
IR03	IR03TA53B	E	No soil samples were analyzed
IR03	IR03TA53C	E	No soil samples were analyzed
IR03	IR03TA53D	E	No soil samples were analyzed
IR03	IR03TA53E	E	
IR03	IR03TA53F	E	
IR03	PA47TA05	E	
IR03	PA47TA06	E	No soil samples were analyzed
IR03	PA50TA13	E	
IR04	IR04B001	E	
IR04	IR04B002	E	
IR04	IR04B004	E	
IR04	IR04B006	E	
IR04	IR04B007	E	
IR04	IR04B009	E	
IR04	IR04B010	E	
IR04	IR04B011	E	
IR04	IR04B012	E	
IR04	IR04B014	E	
IR04	IR04B015	E	
IR04	IR04B016	E	
IR04	IR04B017	E	
IR04	IR04B018	E	
IR04	IR04B019	E	
IR04	IR04B020	E	
IR04	IR04B021	E	
IR04	IR04B022	E	
IR04	IR04B023	E	
IR04	IR04B024	E	
IR04	IR04B025	E	
IR04	IR04B026	E	
IR04	IR04B027	E	
IR04	IR04B027A	E	
IR04	IR04B028	E	
IR04	IR04B029	E	
IR04	IR04B030	E	
IR04	IR04B032	E	
IR04	IR04B033	E	
IR04	IR04B034	E	
IR04	IR04B041	E	
IR04	IR04B042	E	
IR04	IR04B047	E	
IR04	IR56B014	E	
IR04	IR56B016	E	
IR04	IR56B017	E	
IR04	IR01MW09B	E	
IR04	IR01MW366A	E	
IR04	IR01MWI-2	E	
IR04	IR04MW09A	E	
IR04	IR04MW13A	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR04	IR04MW31A	E	
IR04	IR04MW35A	E	
IR04	IR04MW36A	E	
IR04	IR04MW38A	E	
IR04	IR04MW39A	E	
IR04	IR04MW40A	E	
IR04	PA50MW10A	E	No soil samples were analyzed
IR04	IR04P31AA	E	No soil samples were analyzed
IR04	IR04P38A	E	No soil samples were analyzed
IR04	IR01T03B	E	No soil samples were analyzed
IR04	IR01TA06A	E	No soil samples were analyzed
IR04	IR01TA06B	E	
IR04	IR01TA07B	E	
IR04	IR01TA07C	E	No soil samples were analyzed
IR05	IR05B044	E	
IR05	IR05B045	E	
IR05	IR05B046	E	
IR05	IR05B047	E	
IR05	IR05B048	E	
IR05	IR05B049	E	
IR05	IR05B050	E	
IR05	IR05B051	E	
IR05	IR05B052	E	
IR05	IR05B053	E	
IR05	IR05B054	E	
IR05	IR05B055C	E	Drilling refusal at 21 feet bgs
IR05	IR05B055E	E	Drilling refusal at 6.5 feet bgs
IR05	IR05B056	E	
IR05	IR05B057	E	
IR05	IR05B058	E	
IR05	IR05B059	E	
IR05	IR05B060	E	
IR05	IR05B061	E	
IR05	IR05B062	E	
IR05	IR05B063	E	
IR05	IR05B063A	E	No soil samples were analyzed
IR05	IR05B064	E	
IR05	IR05B065C	E	Drilling refusal at 25 feet bgs
IR05	IR05B066	E	
IR05	IR05B067	E	
IR05	IR05B068	E	
IR05	IR05B069D	E	Drilling refusal at 28 feet bgs
IR05	IR05B072	E	
IR05	IR05B075	E	
IR05	IR05B078	E	No soil samples were analyzed
IR05	IR05B079	E	
IR05	IR05B080	E	
IR05	IR05B081	E	
IR05	IR05B083	E	
IR05	IR05B084	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR05	IR05B086	E	
IR05	IR05B087	E	
IR05	IR05MW73A	E	
IR05	IR05MW74A	E	
IR05	IR05MW76A	E	
IR05	IR05MW77A	E	
IR05	IR05MW82A	E	Drilling refusal at 44.5 feet bgs
IR05	IR05MW85A	E	
IR05	IR05P77AA	E	No soil samples were analyzed
IR05	IR05P77AB	E	No soil samples were analyzed
IR11/14/15	IR11B001	E	No soil samples were analyzed
IR11/14/15	IR11B002	E	No soil samples were analyzed
IR11/14/15	IR11B003	E	
IR11/14/15	IR11B004	E	
IR11/14/15	IR11B005	E	
IR11/14/15	IR11B006	E	
IR11/14/15	IR11B007	E	
IR11/14/15	IR11B008	E	
IR11/14/15	IR11B009	E	
IR11/14/15	IR11B010	E	
IR11/14/15	IR11B011	E	
IR11/14/15	IR11B012	E	
IR11/14/15	IR11B013	E	
IR11/14/15	IR11B014	E	
IR11/14/15	IR11B015	E	
IR11/14/15	IR11B016	E	
IR11/14/15	IR11B017	E	
IR11/14/15	IR11B018	E	
IR11/14/15	IR11B019	E	
IR11/14/15	IR11B020	E	
IR11/14/15	IR11B021	E	
IR11/14/15	IR11B022	E	
IR11/14/15	IR11B023	E	
IR11/14/15	IR11B024	E	
IR11/14/15	IR11B028	E	
IR11/14/15	IR11B029	E	Drilling refusal at 8.0 feet bgs
IR11/14/15	IR11B030	E	
IR11/14/15	IR11B032	E	
IR11/14/15	IR11B033	E	
IR11/14/15	IR11B034	E	
IR11/14/15	IR11B035	E	Drilling refusal at 12 feet bgs
IR11/14/15	IR11B036	E	
IR11/14/15	IR11B037	E	
IR11/14/15	IR14B001	E	
IR11/14/15	IR14B002	E	
IR11/14/15	IR14B003	E	
IR11/14/15	IR14B004	E	
IR11/14/15	IR14B005	E	
IR11/14/15	IR14B006	E	
IR11/14/15	IR14B007	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR11/14/15	IR14B008	E	
IR11/14/15	IR14B009	E	
IR11/14/15	IR14B010	E	No soil samples were analyzed
IR11/14/15	IR14B011	E	
IR11/14/15	IR14B012	E	No soil samples were analyzed
IR11/14/15	IR15B001	E	
IR11/14/15	IR15B001C	E	Drilling refusal at 13 feet bgs
IR11/14/15	IR15B002	E	
IR11/14/15	IR15B003	E	
IR11/14/15	IR15B004	E	
IR11/14/15	IR15B005	E	No soil samples were collected
IR11/14/15	IR15B005A	E	Drilling refusal at 17.5 feet bgs
IR11/14/15	IR15B006	E	No soil samples were collected
IR11/14/15	IR15B006C	E	
IR11/14/15	IR15B008	E	No soil samples were collected
IR11/14/15	IR15B015	E	
IR11/14/15	IR15B016	E	
IR11/14/15	IR15B017	E	
IR11/14/15	IR15B018	E	
IR11/14/15	IR11MW25A	E	
IR11/14/15	IR11MW26A	E	
IR11/14/15	IR11MW27A	E	
IR11/14/15	IR14MW09A	E	No soil samples were analyzed
IR11/14/15	IR14MW10A	E	Drilling refusal at 15 feet bgs
IR11/14/15	IR14MW12A	E	
IR11/14/15	IR14MW13A	E	No soil samples were analyzed
IR11/14/15	IR15MW06A	E	
IR11/14/15	IR15MW07A	E	
IR11/14/15	IR15MW08A	E	No soil samples were collected
IR11/14/15	IR15MW09F	E	No soil samples were collected
IR11/14/15	IR15MW10F	E	
IR11/14/15	IR15P08AA	E	No soil samples were collected
IR11/14/15	IR15P08AB	E	No soil samples were collected
IR11/14/15	IR15P08ABA	E	Drilling refusal at 5.0 feet bgs; no soil samples were collected
IR11/14/15	IR15P08ABB	E	Drilling refusal at 5.0 feet bgs; no soil samples were collected
IR11/14/15	IR15P08ABC	E	Drilling refusal at 5.0 feet bgs; no soil samples were collected
IR11/14/15	IR15P08ABD	E	Drilling refusal at 5.0 feet bgs; no soil samples were collected
IR11/14/15	IR15P08B	E	No soil samples were collected
IR11/14/15	IR14TA01A	E	No soil samples were analyzed
IR11/14/15	IR14TA01B	E	
IR11/14/15	IR14TA02A	E	No soil samples were analyzed
IR11/14/15	IR14TA02B	E	
IR11/14/15	IR14TA03A	E	
IR11/14/15	IR14TA03B	E	No soil samples were collected
IR11/14/15	IR14TA03C	E	No soil samples were collected
IR11/14/15	IR14TA03D	E	No soil samples were collected
IR11/14/15	IR14TA03E	E	
IR11/14/15	IR15TA04	E	
IR11/14/15	IR15TA05	E	
IR11/14/15	IR15TA06A	E	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR11/14/15	IR15TA06B	E	No soil samples were analyzed
IR11/14/15	IR15TA07A	E	No soil samples were analyzed
IR11/14/15	IR15TA07B	E	No soil samples were analyzed
IR11/14/15	IR15TA07C	E	
IR11/14/15	IR15TA08A	E	No soil samples were analyzed
IR11/14/15	IR15TA08B	E	No soil samples were analyzed
IR11/14/15	IR15TA09A	E	No soil samples were analyzed
IR12	IR02B085	E	
IR12	IR02B087	E	
IR12	IR04B005	E	
IR12	IR12B001	E	
IR12	IR12B002	E	
IR12	IR12B003	E	
IR12	IR12B004	E	
IR12	IR12B005	E	
IR12	IR12B006	E	No soil samples were analyzed
IR12	IR12B006D	E	Drilling refusal at 15.5 feet bgs
IR12	IR12B007	E	
IR12	IR12B008A	E	Drilling refusal at 43.5 feet bgs
IR12	IR12B009	E	No soil samples were analyzed
IR12	IR12B009A	E	Drilling refusal at 47 feet bgs
IR12	IR12B010	E	
IR12	IR12B011	E	No soil samples were analyzed
IR12	IR12B012A	E	Drilling refusal at 45.5 feet bgs; no soil samples were analyzed
IR12	IR12B012B	E	No soil samples were analyzed
IR12	IR02MW87A	E	No soil samples were analyzed
IR12	IR12MW11A	E	
IR12	IR12MW12A	E	
IR12	IR12MW13A	E	
IR12	IR12MW14A	E	
IR12	IR12MW15A	E	
IR12	IR12MW16A	E	
IR12	IR12MW17A	E	
IR12	IR12MW18A	E	
IR12	IR12MW19A	E	
IR12	IR12MW20A	E	
IR12	IR12MW21A	E	No soil samples were analyzed
IR12	IR04P31AB	E	No soil samples were analyzed
IR12	IR12P12AA	E	No soil samples were analyzed
IR12	IR12P12AB	E	No soil samples were analyzed
IR12	IR12P14AA	E	No soil samples were analyzed
IR12	IR12P14AB	E	No soil samples were analyzed
IR12	IR02TA11A	E	
IR12	IR02TA11B	E	No soil samples were analyzed
IR12	IR02TA12A	E	No soil samples were analyzed
IR12	IR02TA12B	E	No soil samples were analyzed
IR12	IR12TA01A	E	No soil samples were analyzed
IR12	IR12TA01B	E	No soil samples were analyzed
IR12	IR12TA01C	E	No soil samples were analyzed
IR12	IR12TA02A	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR12	IR12TA02B	E	No soil samples were analyzed
IR12	IR12TA03A	E	No soil samples were analyzed
IR12	IR12TA03B	E	No soil samples were analyzed
IR12	IR12TA04A	E	No soil samples were analyzed
IR12	IR12TA04B	E	No soil samples were analyzed
IR12	IR12TA05A	E	No soil samples were analyzed
IR12	IR12TA05B	E	No soil samples were analyzed
IR12	IR12TA06A	E	No soil samples were analyzed
IR12	IR12TA06B	E	No soil samples were analyzed
IR12	IR12TA07A	E	No soil samples were analyzed
IR12	IR12TA07B	E	No soil samples were analyzed
IR12	IR12TA08	E	
IR12	IR12TA09	E	
IR12	IR12TA10	E	
IR12	IR12TA11A	E	
IR12	IR12TA11B	E	No soil samples were analyzed
IR12	IR12TA12A	E	
IR12	IR12TA12B	E	No soil samples were analyzed
IR12	IR12TA13A	E	No soil samples were analyzed
IR12	IR12TA13B	E	
IR12	IR12TA14A	E	No soil samples were analyzed
IR12	IR12TA14B	E	
IR13	IR13B001	E	
IR13	IR13B002B	E	Drilling refusal at 11.5 feet bgs
IR13	IR13B003B	E	Drilling refusal at 33.5 feet bgs
IR13	IR13B004	E	
IR13	IR13B005	E	
IR13	IR13B006	E	
IR13	IR13B007	E	
IR13	IR13B008	E	
IR13	IR13B009	E	
IR13	IR39B008	D	
IR13	IR39B009	D	
IR13	IR39B010	D	
IR13	IR39B011	D	No soil samples were analyzed
IR13	IR39B012	D	
IR13	IR39B012A	D	
IR13	IR39B013	D	
IR13	IR39B014	D	No soil samples were analyzed
IR13	IR39B015	D	No soil samples were analyzed
IR13	IR39B016	D	No soil samples were analyzed
IR13	IR39B017	D	
IR13	IR39B018	D	
IR13	IR39B020	D	
IR13	IR39B021	D	
IR13	IR39B022	D	
IR13	IR39B024	D	
IR13	IR39B024A	D	Drilling refusal at 15 feet bgs
IR13	IR39B025	D	
IR13	IR39B026	D	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR13	IR39B027	D	No soil samples were analyzed
IR13	IR39B029	D	
IR13	IR39B030	D	
IR13	IR39B031	D	
IR13	IR39B034	D	
IR13	PA39B003	D	
IR13	IR13MW10A	E	
IR13	IR13MW11A	E	
IR13	IR13MW12A	E	
IR13	IR38MW02A	D	No soil samples were analyzed
IR13	IR39MW21A	D	Drilling refusal at 13 feet bgs; no soil samples were analyzed
IR13	IR39MW33A	D	
IR13	IR39MW36A	D	
IR13	PA50MW09A	D	No soil samples were analyzed
IR13	IR13P12AA	E	No soil samples were analyzed
IR13	IR13P12AB	E	No soil samples were analyzed
IR38	IR08B001	D	
IR38	IR08B002	D	
IR38	IR08B003	D	
IR38	IR08B013	D	
IR38	IR08B014	D	
IR38	IR08B015	D	
IR38	IR08B016	D	
IR38	IR08B016A	D	Drilling refusal at 10 feet bgs
IR38	IR08B029	D	
IR38	IR08B030	D	
IR38	IR08B031	D	
IR38	IR08B032	D	
IR38	IR08B033	D	
IR38	IR08B034	D	
IR38	IR08B035	D	
IR38	IR08B036	D	No soil samples were analyzed
IR38	IR08B043	D	
IR38	IR08B044	D	
IR38	IR08B048	D	
IR38	IR08B049	D	
IR38	IR08B050	D	
IR38	IR08B051	D	
IR38	PA38B002	E	
IR38	IR08MW40A	D	No soil samples were analyzed
IR38	IR08MW41A	D	
IR38	PA45TA07	E	
IR39	IR05B070	E	
IR39	IR05B071	E	
IR39	IR36B058	D	
IR39	IR36B067	D	
IR39	IR36B067A	D	
IR39	IR36B134	D	
IR39	PA36B025	D	
IR39	PA36B028	D	

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR39	PA39B001	E	
IR39	PA39B002	E	
IR39	PA39B006	E	
IR39	IR36MW11A	D	No soil samples were analyzed
IR39	IR36MW135A	D	
IR47	PA47TA02	E	
IR50D	PA50TA14	D	
IR50A	PA50MW08A	E	
IR52	IR52B001	E	
IR52	IR52B002	E	
IR52	IR52B003	E	
IR52	IR52B004	E	
IR52	IR52B005	E	
IR52	IR52B006	E	
IR52	IR52B007	E	
IR52	IR52B008	E	
IR52	IR52B009	E	
IR52	IR52B010	E	
IR56	IR56B005	E	
IR56	IR56B006	E	
IR56	IR56B007	E	
IR56	IR56B012	E	
IR56	IR56B020	E	
IR56	IR56B021	E	
IR56	IR56B022	E	
IR56	IR56B023	E	
IR56	IR56B024	E	
IR56	IR56B025	E	
IR56	IR56B026	E	
IR56	IR56B028	E	
IR56	IR56B029	E	
IR56	IR56B030	E	
IR56	IR56B031	E	
IR56	IR56B032	E	
IR56	IR56B035	E	
IR56	IR56B036	E	
IR56	IR56B037	E	
IR56	IR56B038	E	
IR56	IR72B017	E	
IR56	PA56B001	E	
IR56	PA56B002	E	
IR56	PA56B003	E	
IR56	PA56B004	E	
IR56	IR72MW33A	E	No soil samples were analyzed
IR56	IR74MW01A	E	
IR56	IR72P33AA	E	No soil samples were analyzed
IR56	IR72P33AB	E	No soil samples were analyzed
IR56	IR01TA02A	E	No soil samples were analyzed
IR56	IR01TA03B	E	No soil samples were analyzed
IR72	IR01B008	E	No soil samples were analyzed

**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR72	IR04B003	E	
IR72	IR04B008	E	
IR72	IR04B043	E	
IR72	IR04B044	E	
IR72	IR04B045	E	
IR72	IR04B046	E	
IR72	IR56B008	E	
IR72	IR56B009	E	
IR72	IR56B010	E	
IR72	IR56B011	E	
IR72	IR56B013	E	
IR72	IR56B015	E	
IR72	IR56B018	E	
IR72	IR56B019	E	
IR72	IR56B027	E	
IR72	IR56B033	E	
IR72	IR56B034	E	
IR72	IR72B001	E	
IR72	IR72B002	E	Drilling refusal at 13 feet bgs
IR72	IR72B003	E	
IR72	IR72B004	E	
IR72	IR72B005	E	Drilling refusal at 13.5 feet bgs
IR72	IR72B006	E	Drilling refusal at 10 feet bgs
IR72	IR72B007	E	
IR72	IR72B009	E	
IR72	IR72B010	E	
IR72	IR72B011	E	
IR72	IR72B015	E	
IR72	IR72B016	E	
IR72	IR72B028	E	
IR72	IR72B029	E	
IR72	IR72B030	E	
IR72	IR72B031	E	
IR72	IR72B036	E	Drilling refusal at 4.0 feet bgs
IR72	IR72B037	E	
IR72	IR72B038	E	
IR72	IR72B040	E	
IR72	IR04MW37A	E	
IR72	IR56MW39A	E	
IR72	IR72MW32A	E	No soil samples were analyzed
IR72	IR01TA03A	E	
IR72	IR01TA04A	E	
IR72	IR01TA04B	E	No soil samples were analyzed
IR73	IR73B003	E	
IR73	IR73B005	E	
IR73	IR73B006	E	
IR73	IR73B007	E	
IR73	IR73B008A	E	Drilling refusal at 4.0 feet bgs
IR73	IR73B008B	E	No soil samples were analyzed
IR73	IR73B009	E	

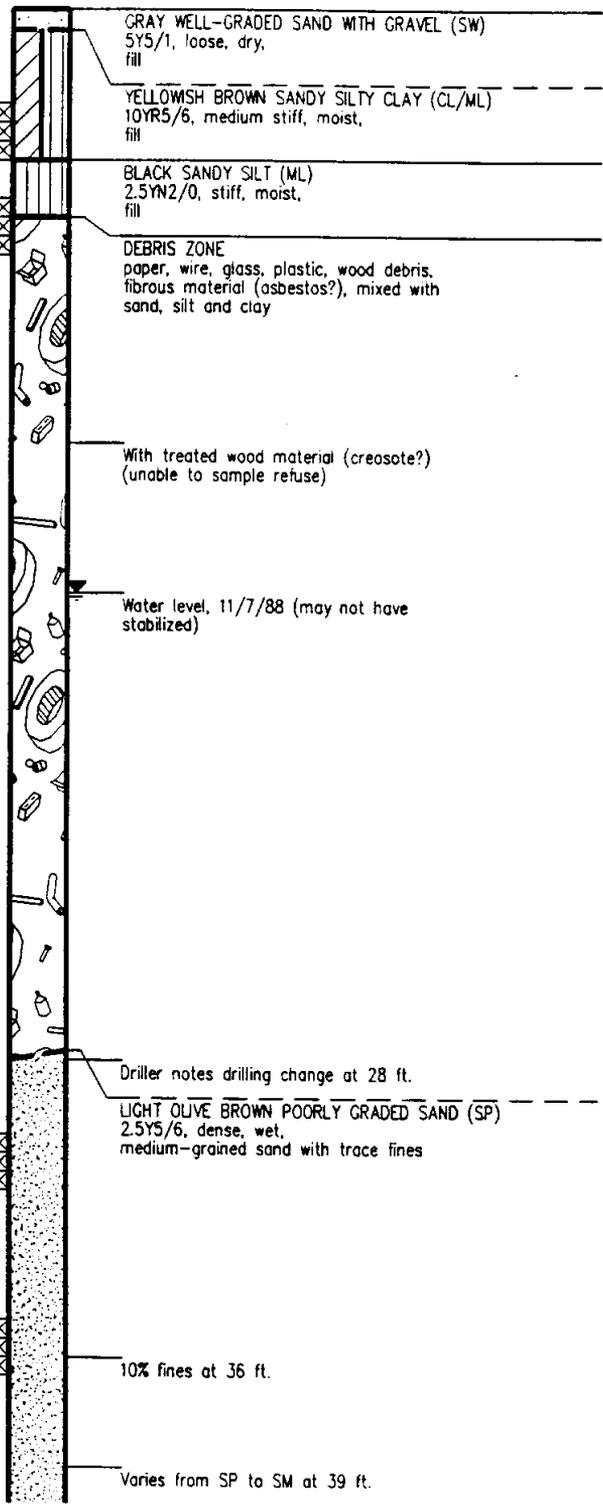
**INDEX OF PARCEL E REMEDIAL INVESTIGATION BORING,  
MONITORING WELL, PIEZOMETER, AND TEST PIT LOGS (Continued)**

SITE	STATION	PARCEL	COMMENT
IR73	IR73B010	E	
IR73	IR73B011	E	
IR73	IR73B012	E	
IR73	IR73MW04A	E	
IR73	PA50MW08A	E	No soil samples were analyzed
IR73	PA47TA02	E	
IR73	PA50TA14	E	
IR75	IR75MW05B	E	
IR75	IR75P05AA	E	No soil samples were analyzed
IR75	IR75P05AB	E	No soil samples were analyzed
IR76	IR01BUC01	E	
IR76	IR72B025	E	
IR76	IR72B026	E	
IR76	IR72B027	E	
IR76	IR75B001	E	
IR76	IR75B002	E	
IR76	IR75B003	E	
IR76	IR75B004	E	
IR76	IR76B001	E	
IR76	IR76B003	E	
IR76	IR76B003A	E	Drilling refusal at 11.5 feet bgs
IR76	IR76B004	E	
IR76	IR76B005	E	
IR76	IR76B006	E	
IR76	IR76B007	E	
IR76	IR76B008	E	
IR76	IR76B009	E	
IR76	IR76B010	E	
IR76	IR76B011	E	
IR76	IR76B012	E	
IR76	IR76MW13A	E	No soil samples were analyzed
IR76	IR01TA01A	E	No soil samples were analyzed

Log of Boring: IR01B001  
 Equipment: MOBILE B-53 (HSA), 8 in. diam.  
 Date: 11/07/1988  
 Elevation: GS 18.00 feet  
 Total Depth: 70.5 ft.

Blows / 6"  
 OVA(ppm)  
 Sample Number

Depth (ft)  
 Sample



4  
5  
9  
7  
9  
11

5  
40  
50  
14  
13  
23  
38  
2

GRAY WELL-GRADED SAND WITH GRAVEL (SW)  
 5Y5/1, loose, dry,  
 fill

YELLOWISH BROWN SANDY SILTY CLAY (CL/ML)  
 10YR5/6, medium stiff, moist,  
 fill

BLACK SANDY SILT (ML)  
 2.5Y2/0, stiff, moist,  
 fill

DEBRIS ZONE  
 paper, wire, glass, plastic, wood debris,  
 fibrous material (asbestos?), mixed with  
 sand, silt and clay

With treated wood material (creosote?)  
 (unable to sample refuse)

Water level, 11/7/88 (may not have  
 stabilized)

Driller notes drilling change at 28 ft.

LIGHT OLIVE BROWN POORLY GRADED SAND (SP)  
 2.5Y5/6, dense, wet,  
 medium-grained sand with trace fines

10% fines at 36 ft.

Varies from SP to SM at 39 ft.



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Log of Boring IR01B001  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
 mf

JOB NUMBER

APPROVED

DATE  
 12/93

REVISED DATE

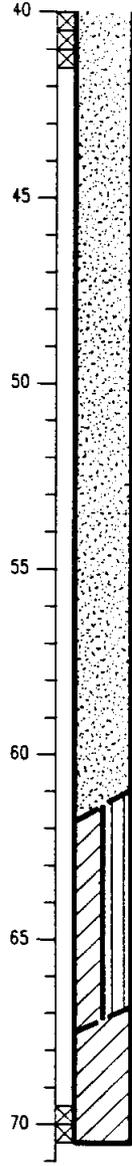
Log of Boring: IR01B001 (p. 2)  
 Equipment: MOBILE B-53 (HSA), 8 in. diam.  
 Date: 11/07/1988  
 Elevation: GS 18.00 feet  
 Total Depth: 70.5 ft.

Blows / 6"  
 20  
 26  
 50

OVA(ppm)  
 3

Sample  
 Number

Depth (ft)



LIGHT OLIVE BROWN SANDY SILTY CLAY (CL/ML)  
 2.5Y5/4, stiff, moist,

DARK GRAY SHALE BEDROCK  
 crushed to intensely fractured, low  
 hardness, little weathered

42  
 50

1

Bottom of boring at 70.5 feet. Boring  
 backfilled with bentonite cement grout.



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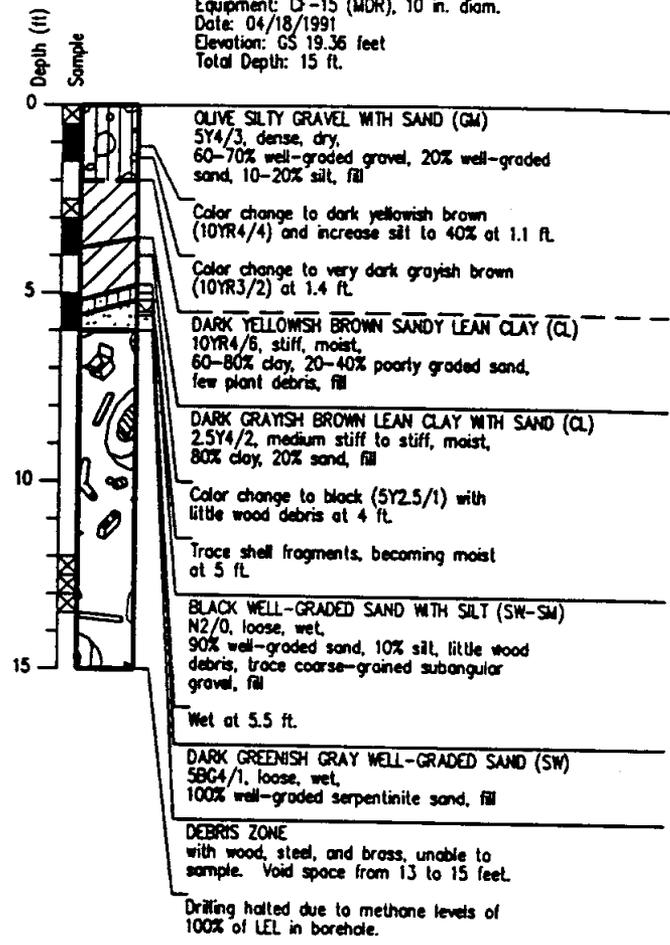
Log of Boring IR01B001  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN mf	JOB NUMBER	APPROVED	DATE 12/93	REVISED DATE
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Log of Boring: IR01B003A  
 Equipment: CF-15 (MDR), 10 in. diam.  
 Date: 04/18/1991  
 Elevation: GS 19.36 feet  
 Total Depth: 15 ft.

Blows / 6"	OVA(ppm)	Sample Number
0	0	9116H713
0	0	9116H714
8		9116H715



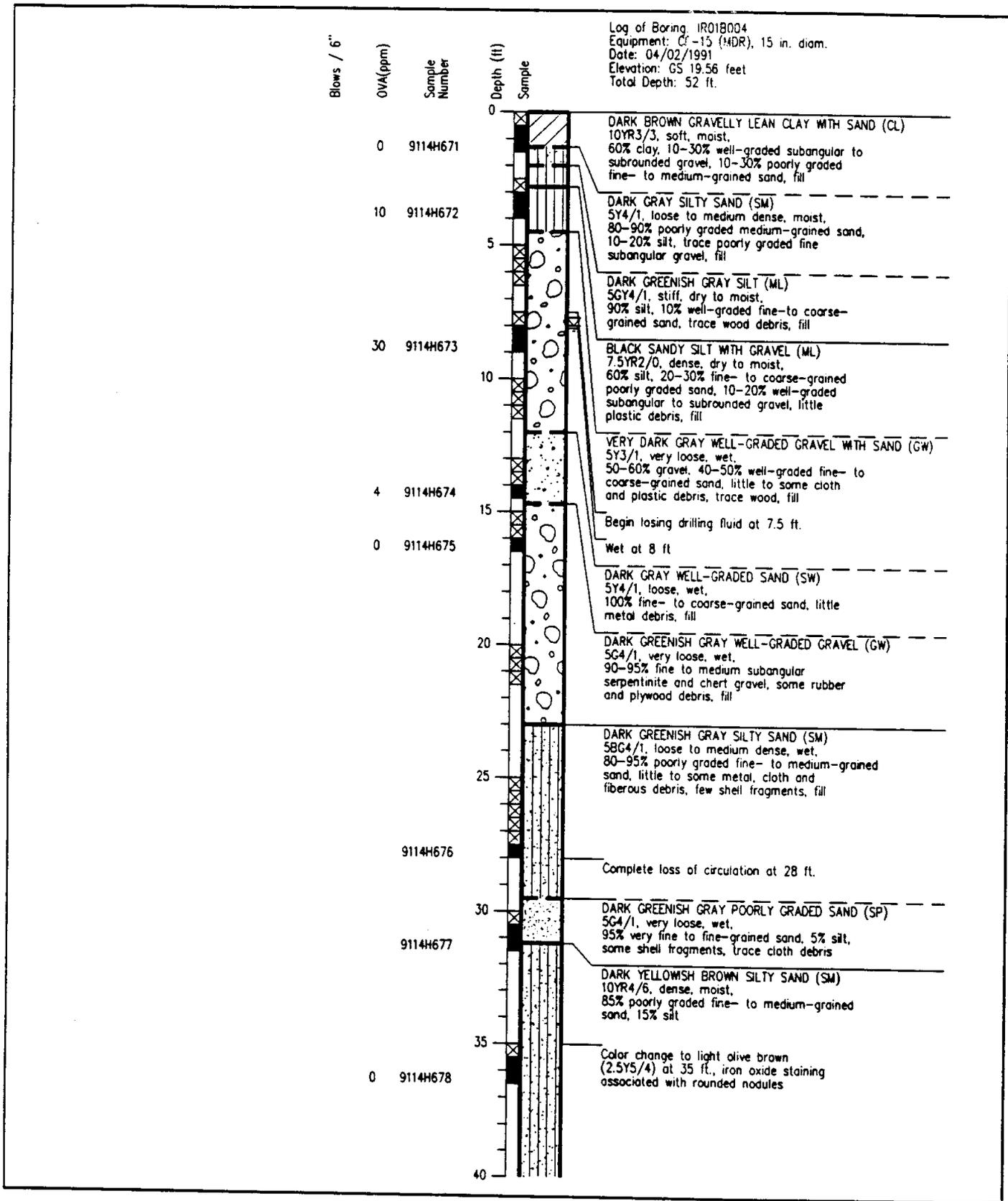
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Log of Boring IR01B003A

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/30/92	



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Log of Boring IR01B004

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
mf

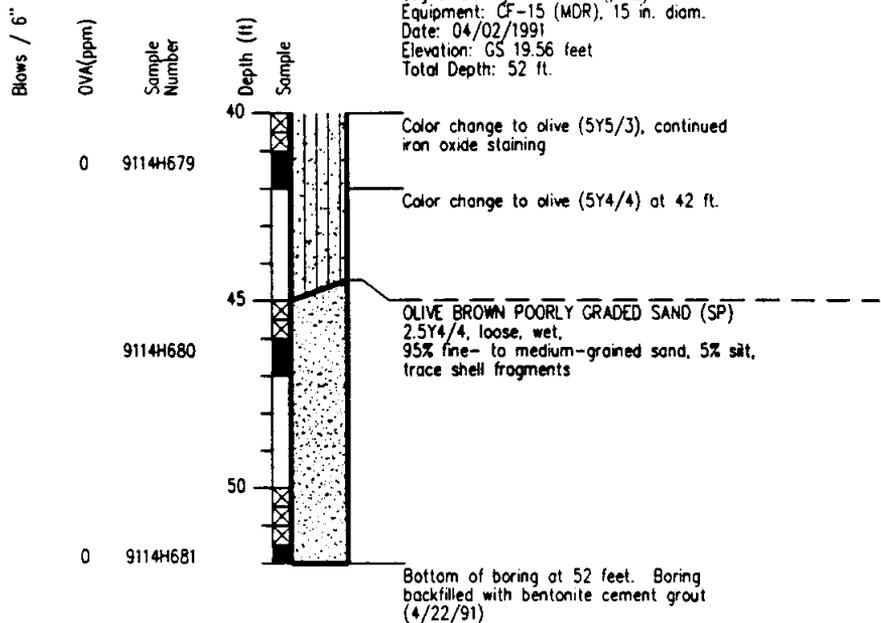
JOB NUMBER  
11400 1005

APPROVED

DATE  
11/93

REVISED DATE

Log of Boring: IR018004 (p. 2)  
 Equipment: CF-15 (MCR), 15 in. diam.  
 Date: 04/02/1991  
 Elevation: GS 19.56 feet  
 Total Depth: 52 ft.



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Log of Boring IR018004

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN

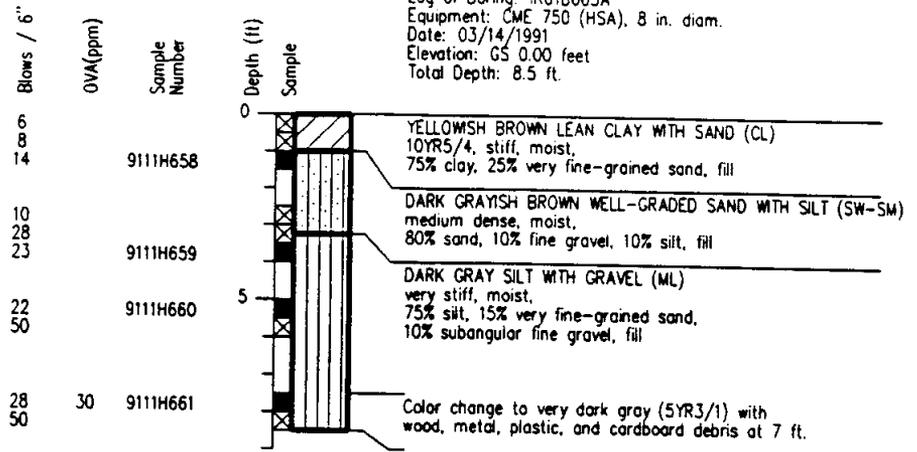
JOB NUMBER

APPROVED

DATE  
 11/93

REVISED DATE

Log of Boring: iR01B005A  
 Equipment: CME 750 (HSA), 8 in. diam.  
 Date: 03/14/1991  
 Elevation: GS 0.00 feet  
 Total Depth: 8.5 ft.



Bottom of boring at 8.5 feet. Boring terminated due to elevated methane levels in breathing zone and in borehole. Boring back-filled with bentonite cement grout (3/15/91)



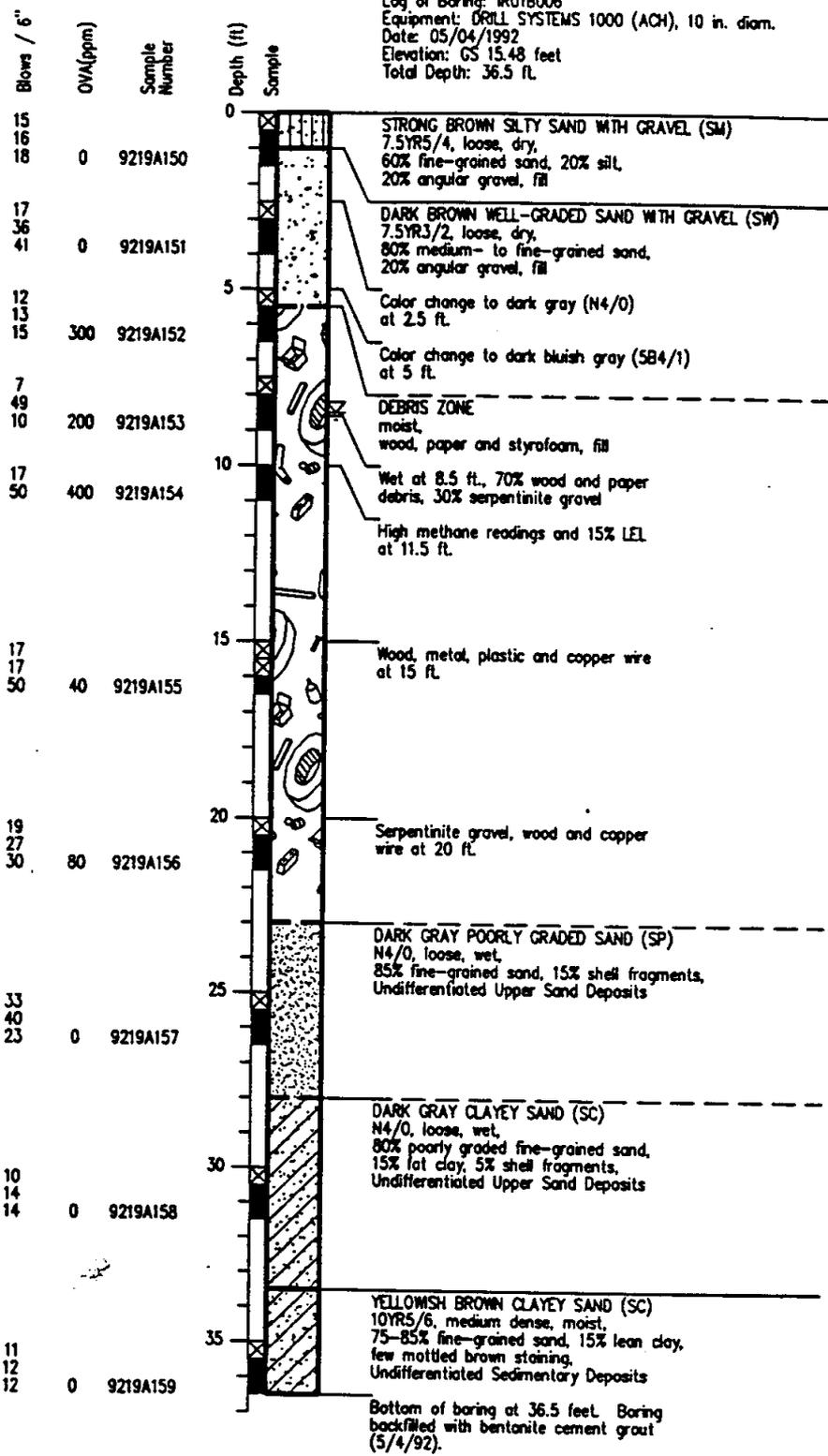
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Log of Boring iR01B005A

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

Log of Boring: IR01B006  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/04/1992  
 Elevation: GS 15.48 feet  
 Total Depth: 36.5 ft.



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Log of Boring IR01B006

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PLATE

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 W.F

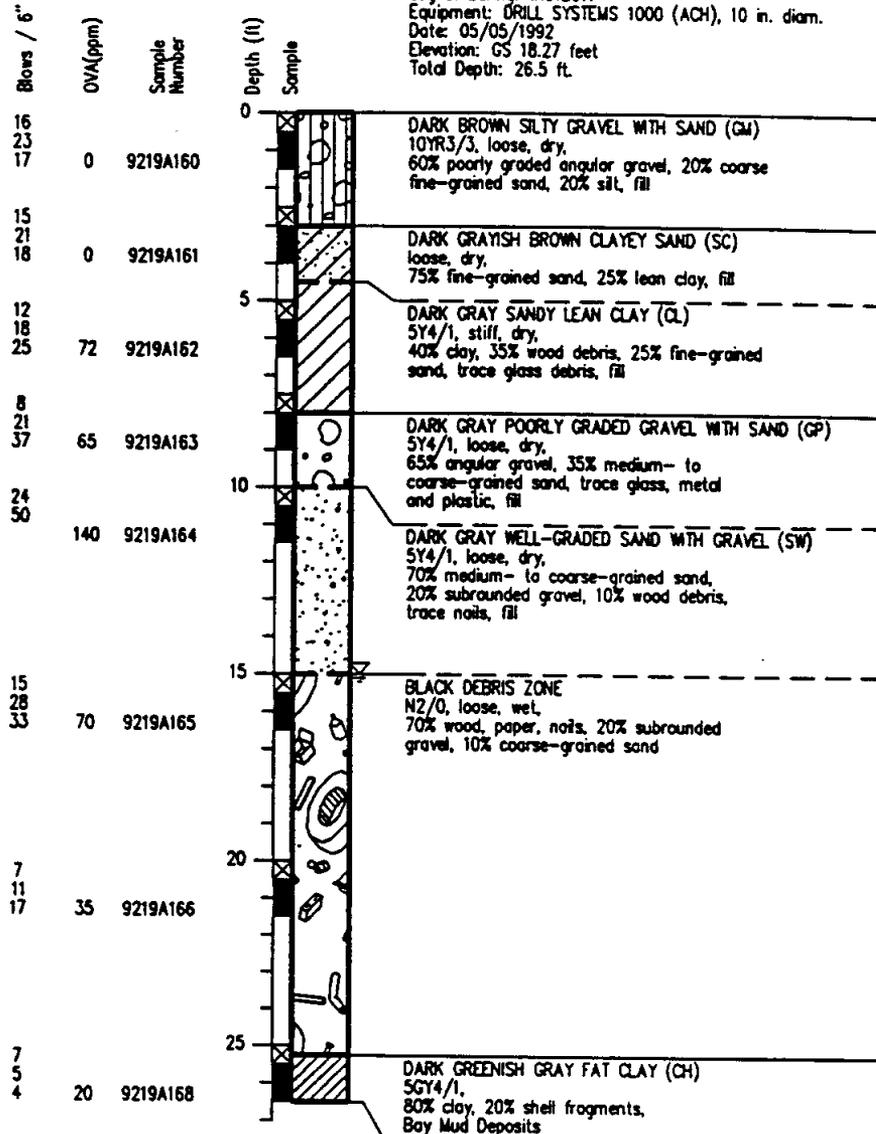
JOB NUMBER

APPROVED

DATE  
 10/92

REVISED DATE

Log of Boring: IR01B011  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/05/1992  
 Elevation: GS 18.27 feet  
 Total Depth: 26.5 ft.



Bottom of boring at 26.5 feet. Boring  
backfilled with bentonite cement grout  
(5/5/92). Grab water sample 9219A167  
collected.



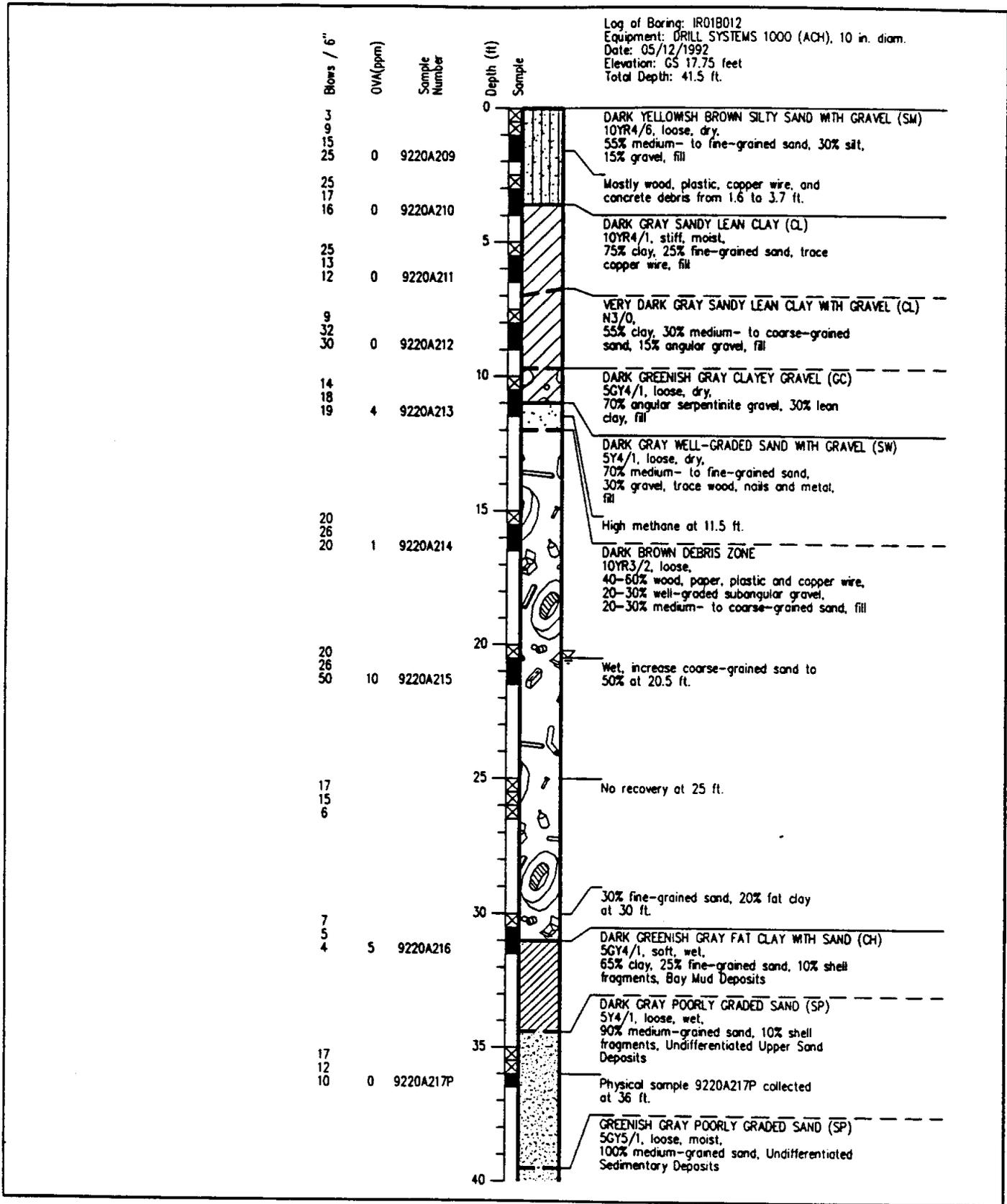
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Log of Boring IR01B011

Naval Station, Treasure Island  
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PLATE

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WJF			10/92	



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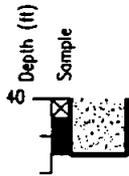
Log of Boring IR01B012

Naval Station, Treasure Island  
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PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
mf			11/13/92	

Blows / 6"	OVA(ppm)	Sample Number
14		
15		
16	0	9220A218



Log of Boring: IR01B012 (p. 2)  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/12/1992  
 Elevation: GS 17.75 feet  
 Total Depth: 41.5 ft.

Bottom of boring at 41.5 feet. Boring backfilled with bentonite cement grout (5/12/92). Grab water sample 9220H161 collected.



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Log of Boring IR01B012

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PLATE

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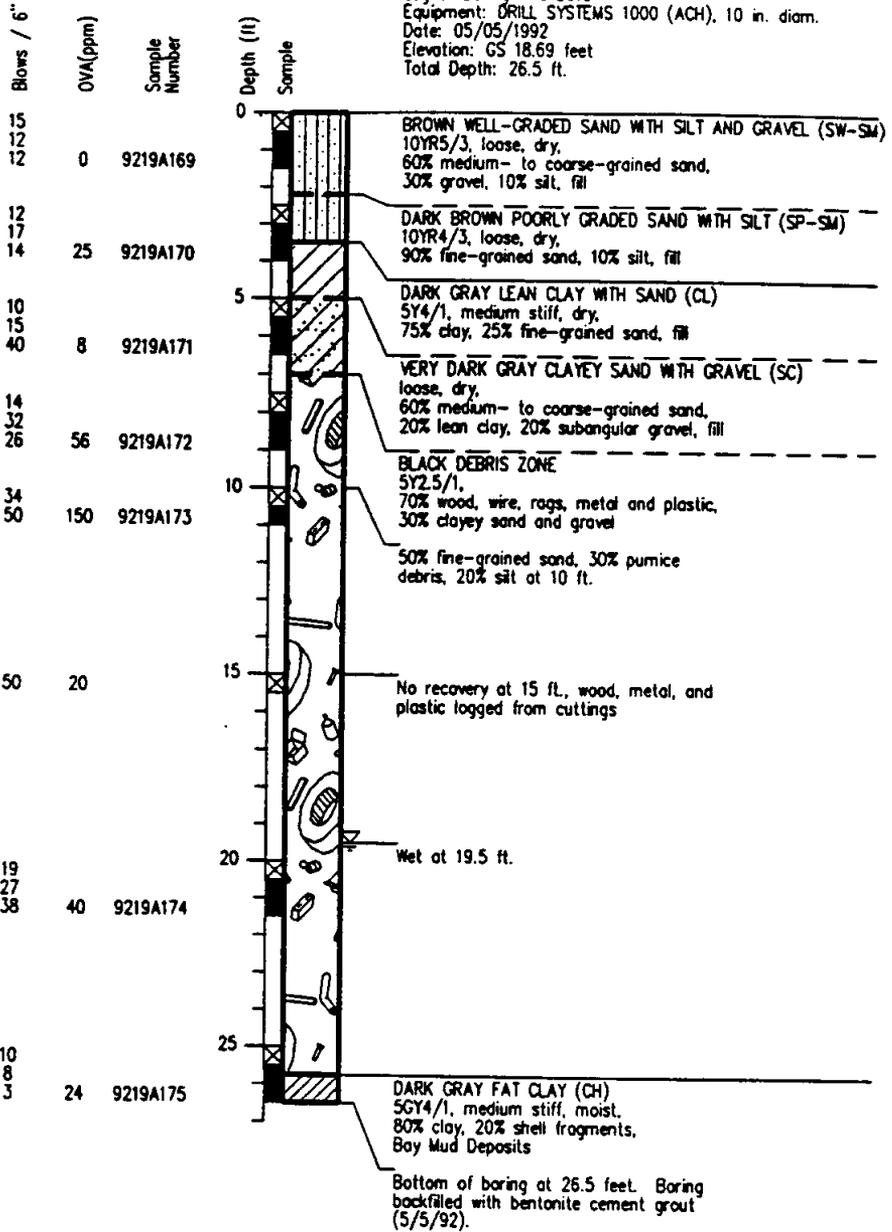
JOB NUMBER

APPROVED

DATE  
 11/13/92

REVISED DATE

Log of Boring: IR01B013  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/05/1992  
 Elevation: GS 18.69 feet  
 Total Depth: 26.5 ft.



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Log of Boring IR01B013

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

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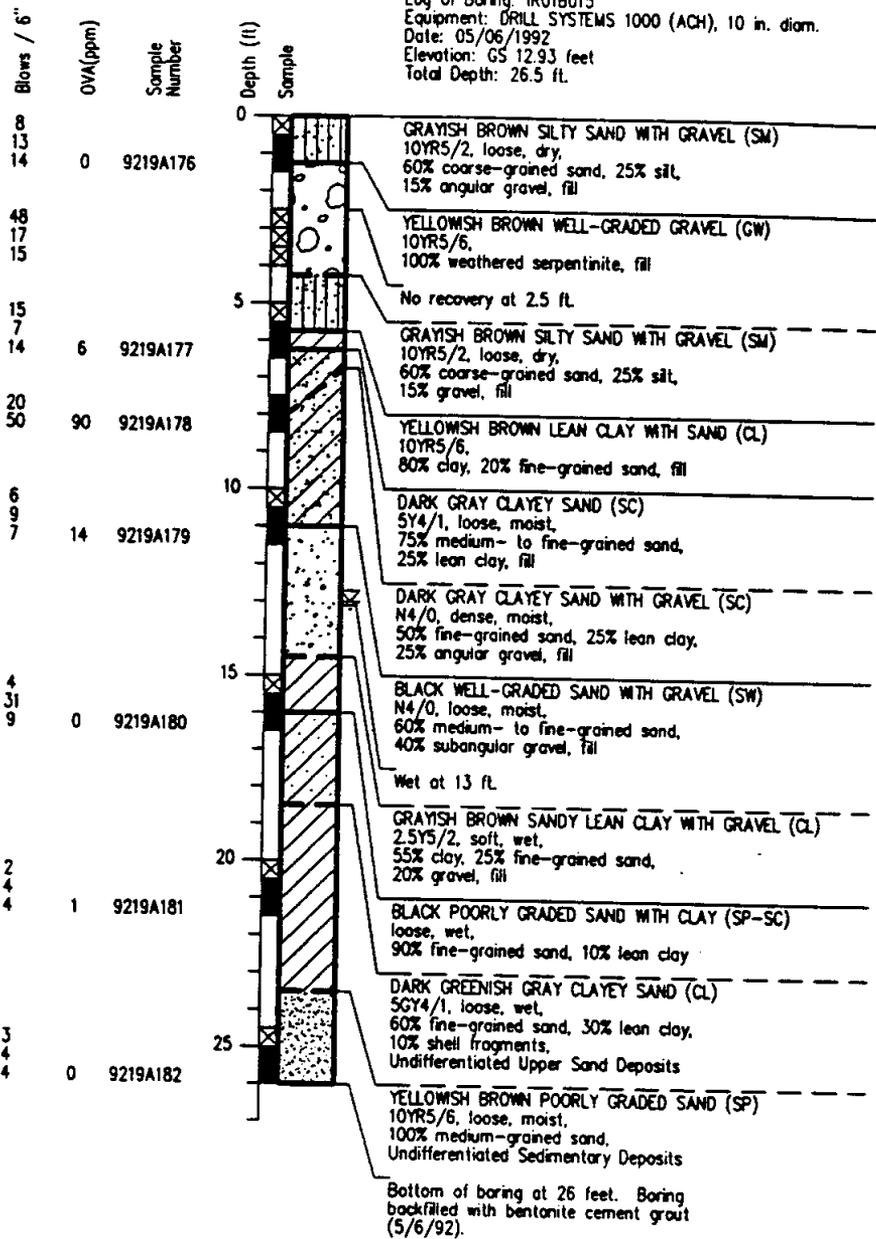
JOB NUMBER

APPROVED

DATE  
 10/92

REVISED DATE

Log of Boring: IR01B015  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/06/1992  
 Elevation: GS 12.93 feet  
 Total Depth: 26.5 ft.



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Log of Boring IR01B015

Naval Station, Treasure Island  
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JOB NUMBER

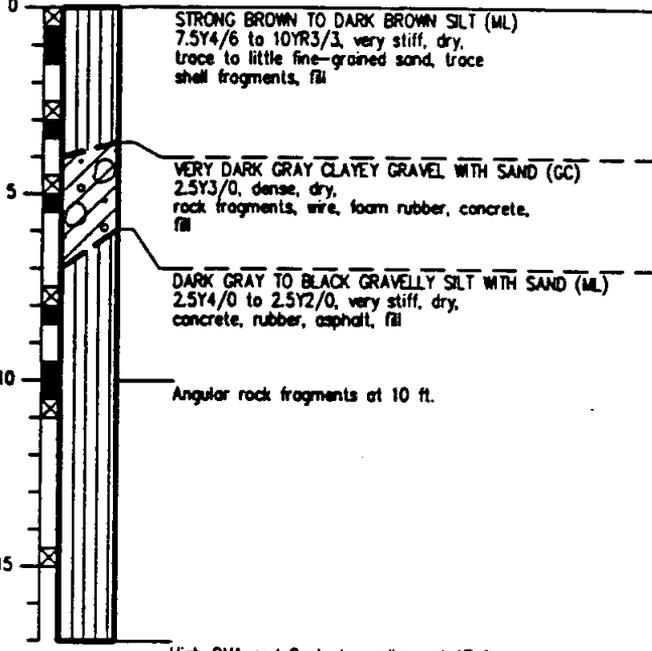
APPROVED

DATE  
10/92

REVISED DATE

Log of Boring: IR01B017A  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/12/1990  
 Elevation: GS 22.08 feet  
 Total Depth: 17.0 ft.

Blows / 6"	OVA (ppm)	Sample Number	Depth (ft)	Sample
15 35 43	0	9041L025	0	
35 50	0	9041L026	0	
15 50	2	9041L027	5	
35 50	9	9041L028	9	
13 16 50	15	9041L029	10	
50			15	



High OVA and Gastech readings at 17 ft., boring terminated due to explosive atmosphere. Boring backfilled with approximately 30 gallons of bentonite slurry at the bottom and 90 gallons of bentonite cement grout placed from the top of the slurry to the surface.



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Log of Boring: IR01B017A  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
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PLATE  
**A1**

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 GDT

JOB NUMBER  
 18639.160.02

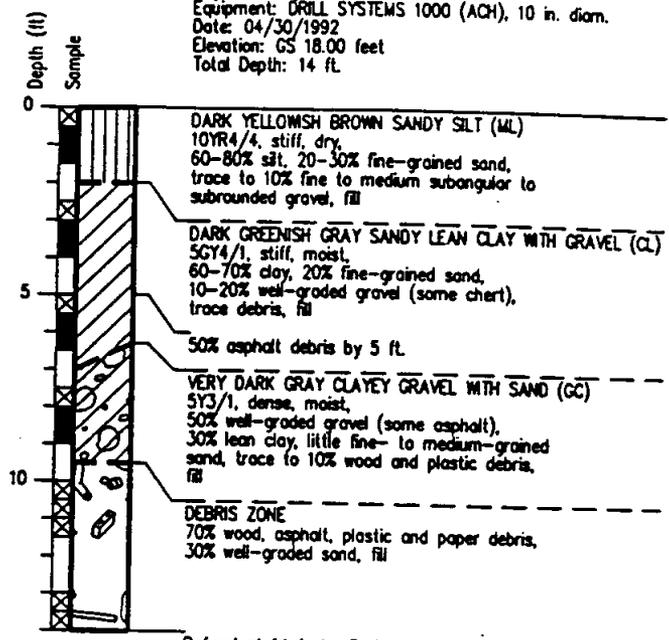
APPROVED

DATE  
 10/91

REVISED DATE

Log of Boring: IR01B018G  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 04/30/1992  
 Elevation: GS 18.00 feet  
 Total Depth: 14 ft.

Blows / 6"	OVA(ppm)	Sample Number
9 20 27	0	9218H114
8 31 37	15	9218H115
11 19 22	80	9218H116
28 43 48	120	9218H117
38 33 12	200	
19 50		



Refusal at 14 feet. Boring backfilled with bentonite cement grout (4/30/92).



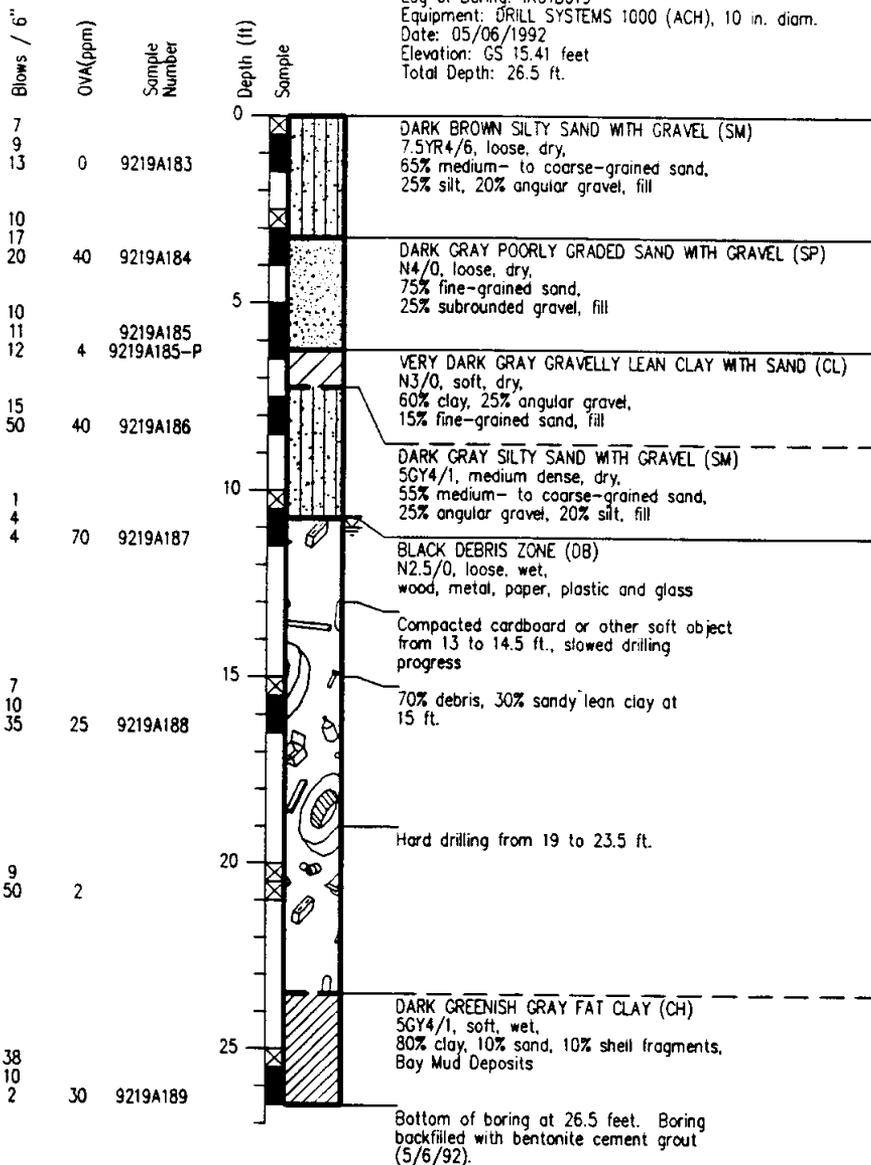
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Log of Boring IR01B018G  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/30/92	

Log of Boring: IR01B019  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/06/1992  
 Elevation: GS 15.41 feet  
 Total Depth: 26.5 ft.



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PLATE

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mf

JOB NUMBER

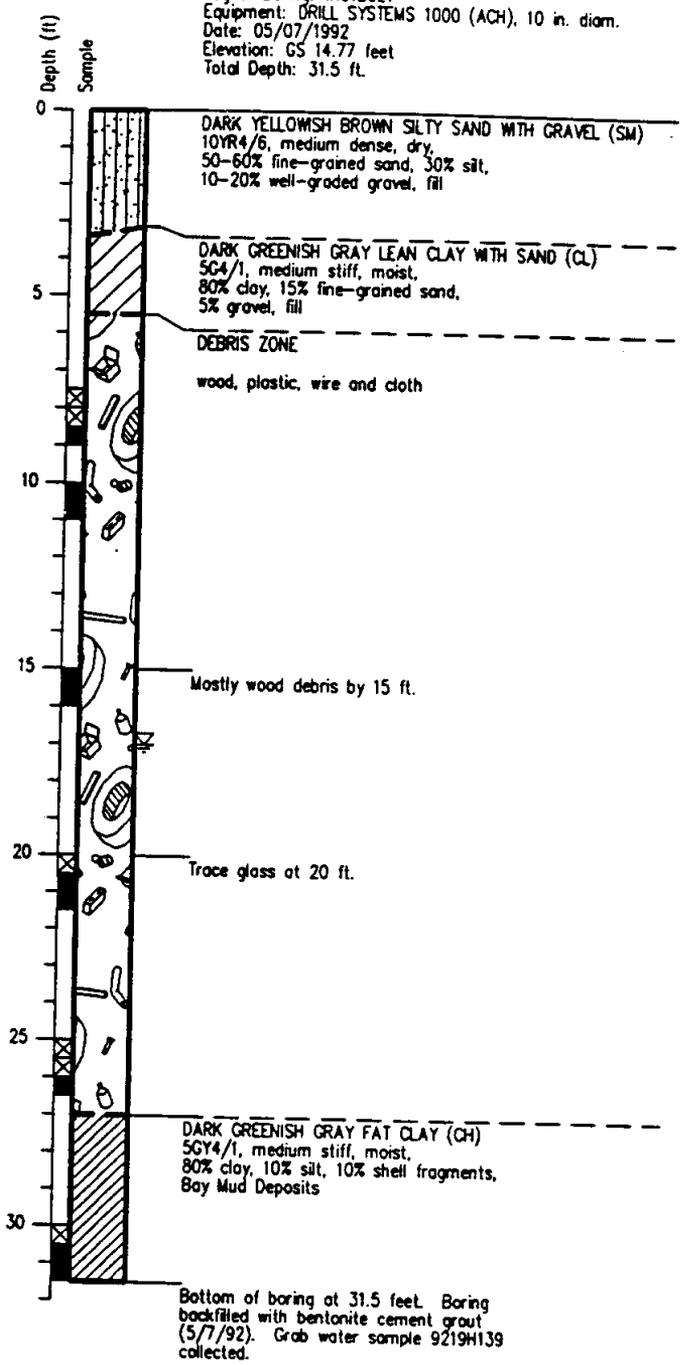
APPROVED

DATE  
12/93

REVISED DATE

Log of Boring: IR01B021  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/07/1992  
 Elevation: GS 14.77 feet  
 Total Depth: 31.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
19		
10		
20	150	9219H133
30		
50	75	9219H134
22		
50	30	9219H135
13		
20		
13	120	9219H136
8		
9		
4	20	9219H137
2		
5		
4	120	9219H138



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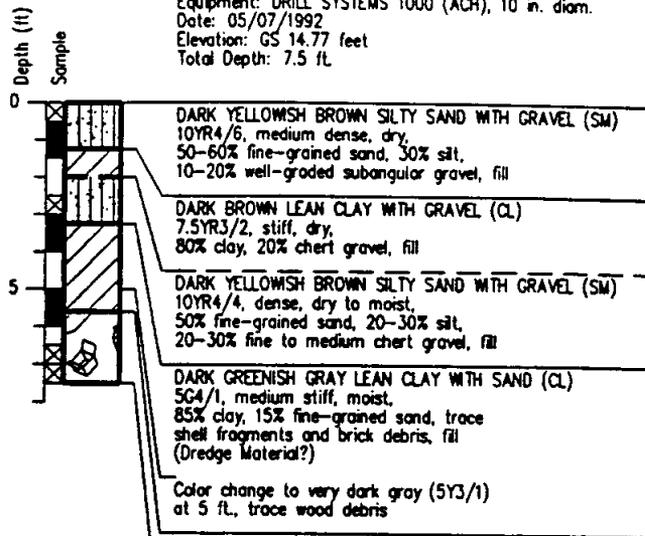
Log of Boring IR01B021  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
W.J.F.			10/92	

Log of Boring: IR01B021A  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/07/1992  
 Elevation: GS 14.77 feet  
 Total Depth: 7.5 ft

Blows / 6"	OVA(ppm)	Sample Number
10		
13		
16	0	9219H130
18		
21		
19	9	9219H131
26		
50	60	9219H132
34		
50	150	



Color change to very dark gray (5Y3/1) at 5 ft., trace wood debris

**DEBRIS ZONE**

wood, plastic and metal wire, oil like product on some wood

Refusal, can not drive conductor casing past 6.5 feet. Sampler driven from 6.5 to 7.5 feet (bottom of boring). Boring backfilled with bentonite cement grout (5/7/92).



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**Log of Boring IR01B021A**

Naval Station, Treasure Island  
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PLATE

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JOB NUMBER

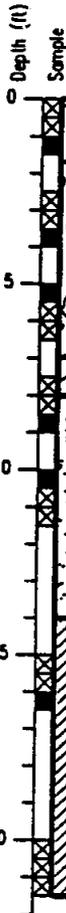
APPROVED

DATE  
 10/92

REVISED DATE

Log of Boring: IR01B023  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/06/1990  
 Elevation: GS 12.81 feet  
 Total Depth: 21.5 ft.

Blows / 6"	DVA (ppm)	Sample Number
4 7 15	0	9045G425
11 13 24	0	9045G426
17 23 30	3	9045G427
4 4 2	0	9045G428
2 4 6	0	9045G429
2 2 3	40	9045G430
2 2 3	30	



LIGHT YELLOWISH BROWN SILTY GRAVEL WITH SAND (Gm)  
 10YR6/4, medium dense, dry,  
 50-55% fine gravel, 20-25% silt, 15-20%  
 sand, fill

Moist, with chert and serpentinite gravel  
 at 3 ft.

DARK YELLOWISH BROWN WELL-GRADED SAND (SW)  
 10YR4/4, loose, wet,  
 90-95% fine to coarse-grained sand, 5% silt

DARK GREENISH GRAY FAT CLAY (CH)  
 5GY4/1, soft, moist,  
 80-85% clay, 10-15% silt, trace shell  
 fragments, Bay Mud deposits

Bottom of boring at 21.5 ft.  
 Boring backfilled with bentonite cement  
 grout (11/6/90)



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Log of Boring: IR01B023  
 Primary Phase Remedial Investigation  
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PLATE

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 wjf

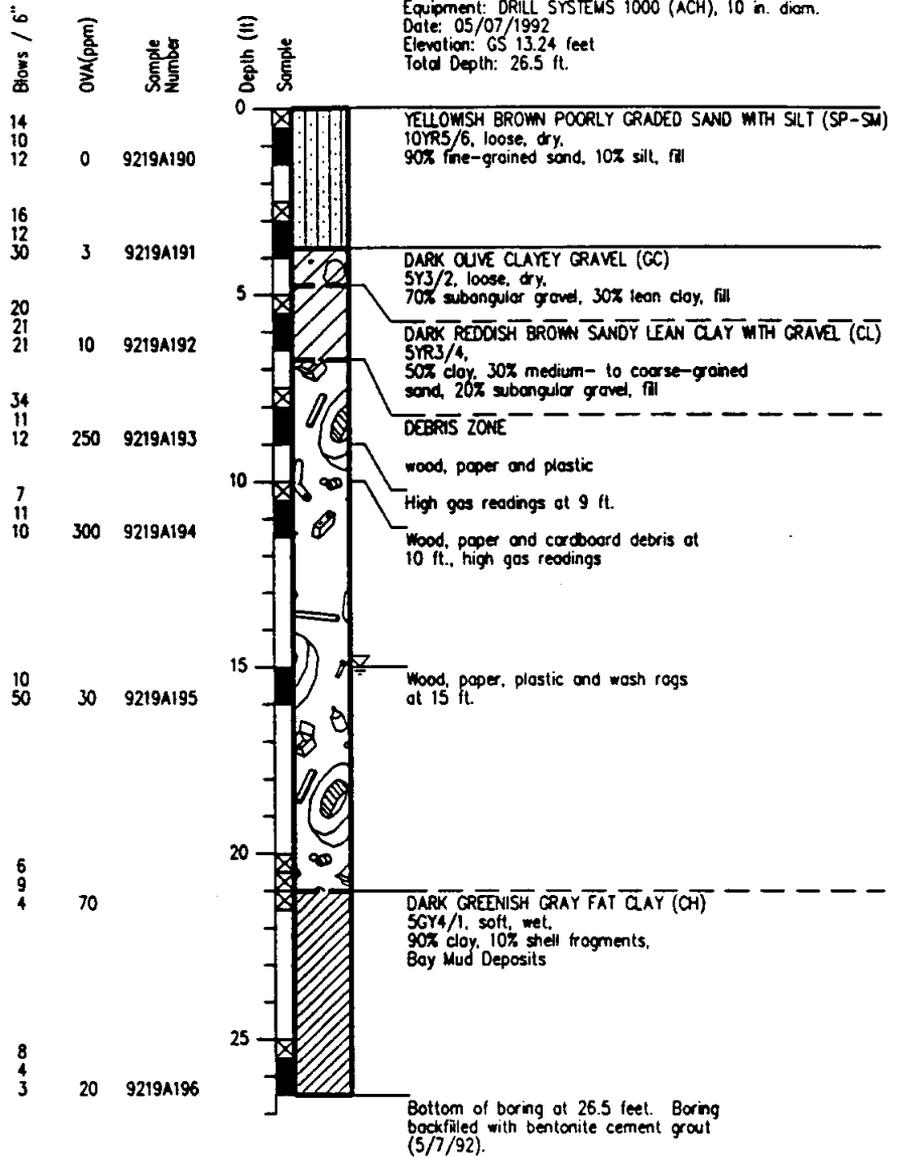
JOB NUMBER  
 18639.160.02

APPROVED

DATE  
 5/02/91

REVISED DATE

Log of Boring: IR01B024  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/07/1992  
 Elevation: GS 13.24 feet  
 Total Depth: 26.5 ft.



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Log of Boring IR01B024

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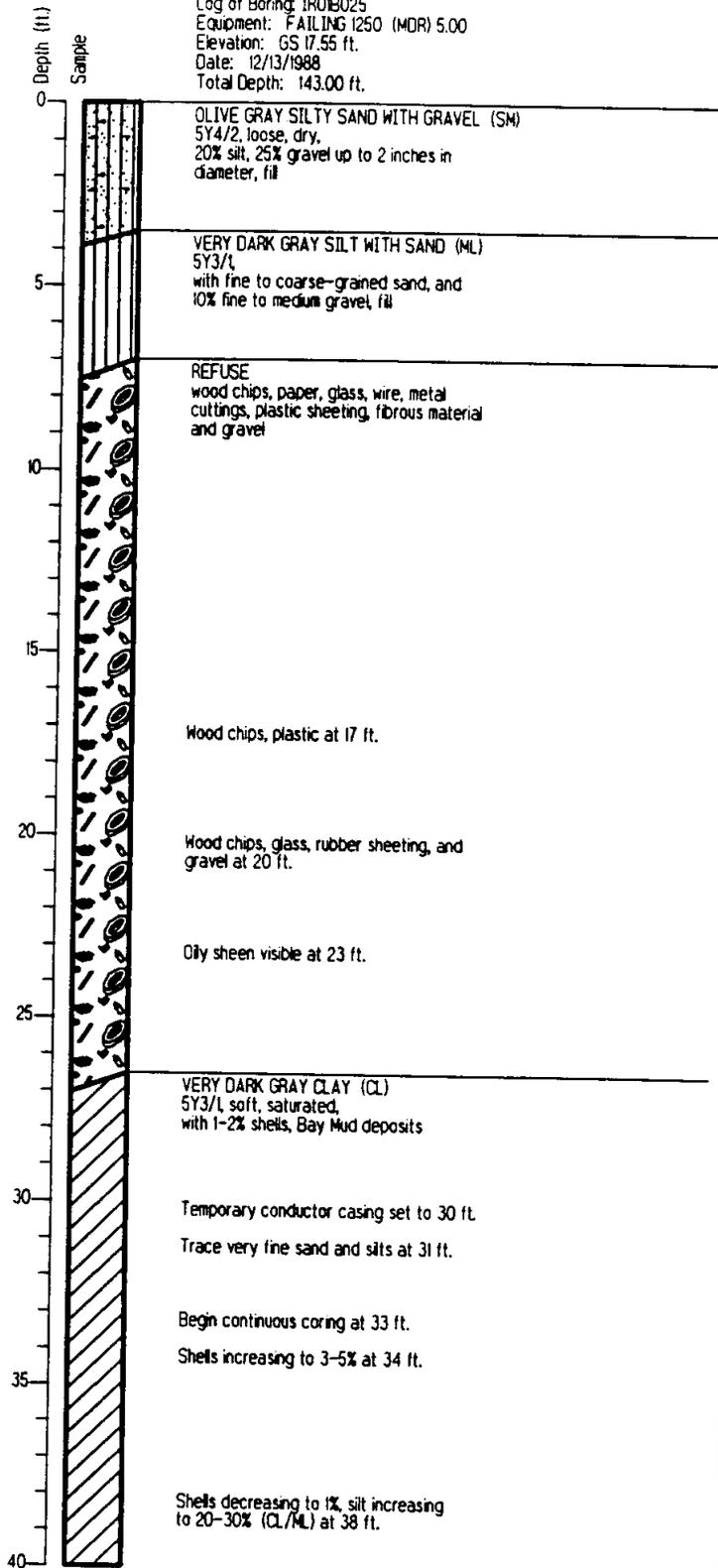
APPROVED

DATE  
11/13/92

REVISED DATE

Log of Boring: IROIB025  
 Equipment: FAILING 1250 (MDR) 5.00  
 Elevation: GS 17.55 ft.  
 Date: 12/13/1988  
 Total Depth: 143.00 ft.

Blows/6"  
 OVA (ppm)  
 Sample Number



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Log of Boring IROIB025  
 Naval Station, Treasure Island  
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PLATE

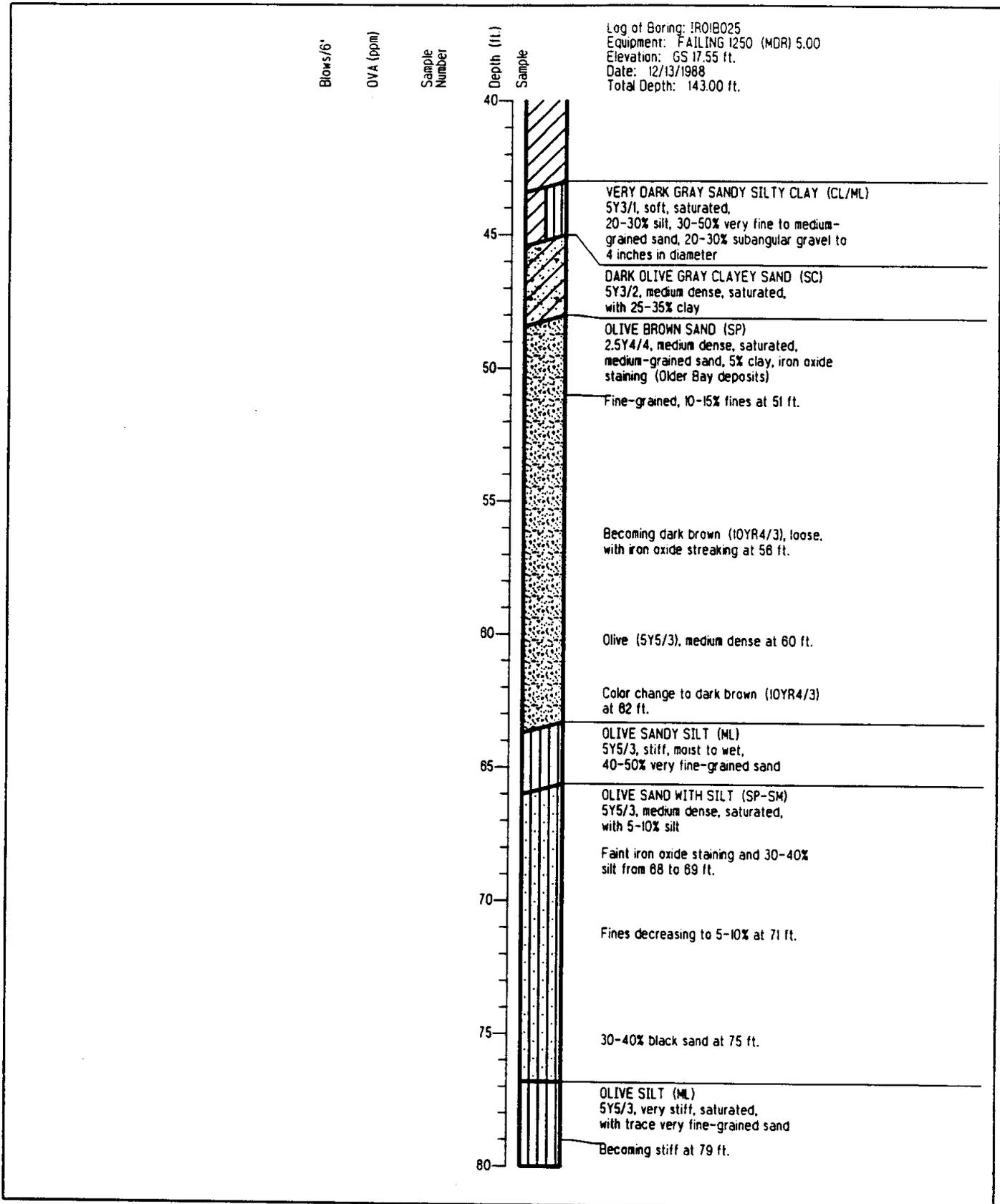
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JOB NUMBER

APPROVED

DATE  
 01/94

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Log of Boring IR01B025  
Naval Station, Treasure Island  
Hunters Point Annex  
San Francisco, California

PLATE

DRAWN  
GOT

JOB NUMBER

APPROVED

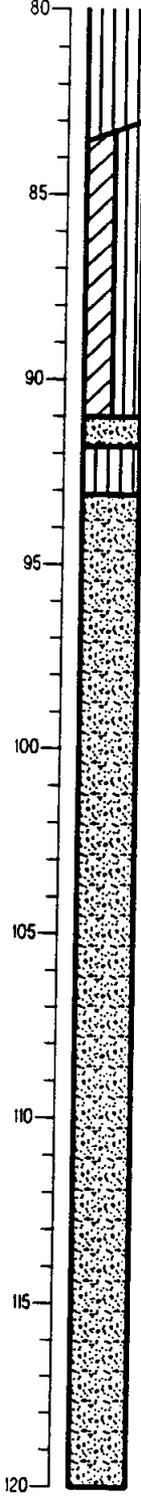
DATE  
01/94

REVISED DATE

Log of Boring: IRO1B025  
 Equipment: FAILING 1250 (MDR) 5.00  
 Elevation: GS 17.55 ft.  
 Date: 12/13/1988  
 Total Depth: 143.00 ft.

Blows/6"  
 OVA (ppm)  
 Sample Number

Depth (ft.)  
 Sample



YELLOWISH BROWN SILTY CLAY (CL/ML)  
 10YR5/6, stiff, saturated,  
 with iron oxide in spherical nodules 0.1 to  
 2 inches in diameter

20-25% very fine black sand and trace  
 gravel at 88 ft.

OLIVE BROWN SAND (SP)  
 2.5Y4/4, dense, wet

LIGHT OLIVE BROWN SILT WITH SAND (ML)  
 2.5Y5/4, stiff, saturated

OLIVE BROWN SAND (SP)  
 2.5Y4/4, dense, saturated,  
 fine-grained sand

Occasional iron oxide staining

Color change to light olive brown  
 (2.5Y5/4) at 104 ft.

Deeply oxidized, dark reddish brown  
 (2.5Y3/6) zone from 108 to 108.8 ft.

Color change to olive brown (2.5Y4/4)  
 at 114 ft.



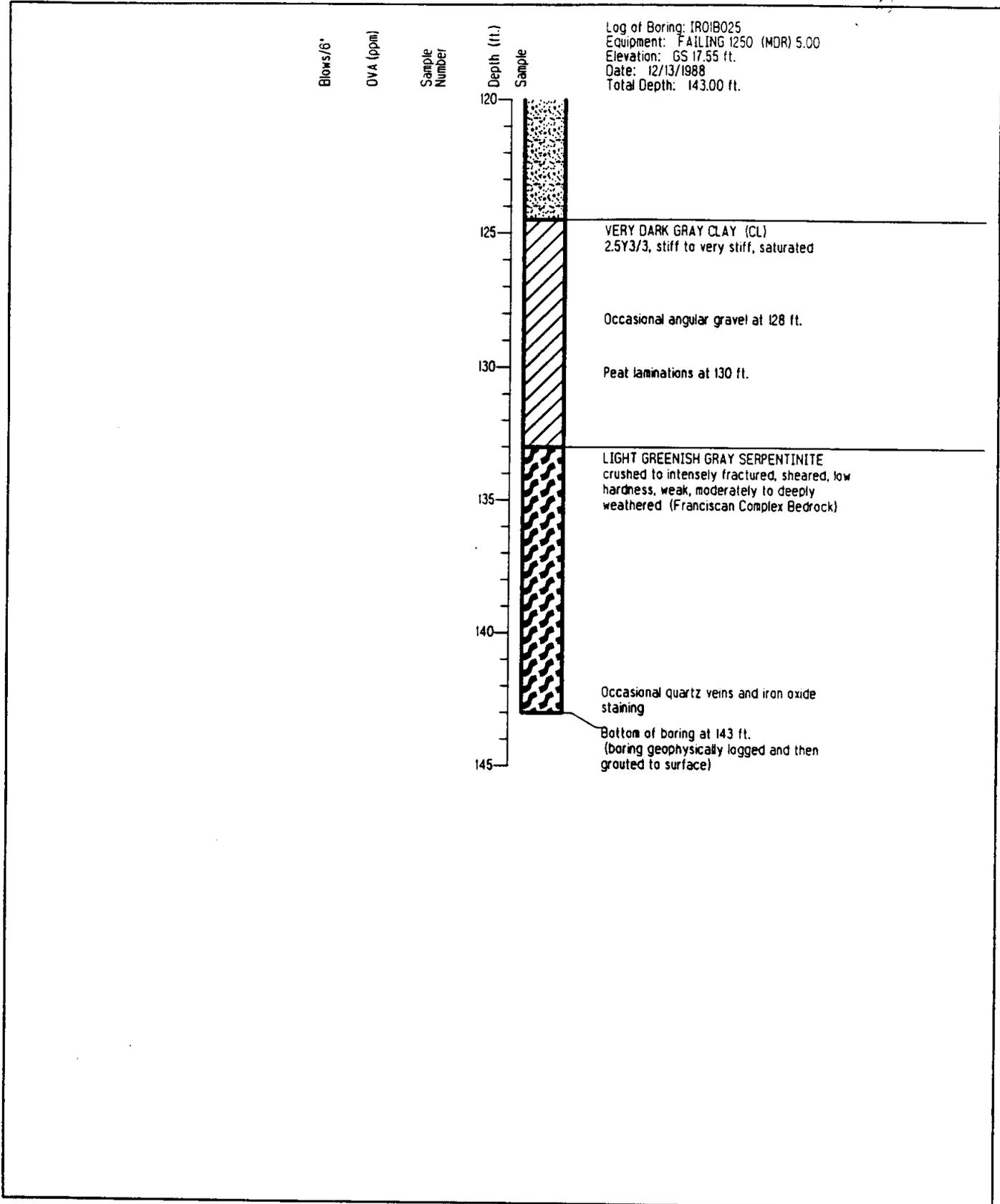
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Log of Boring IRO1B025  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Log of Boring IR01B025  
 Naval Station, Treasure Island  
 Hunters Point Annex  
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PLATE

DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Log of Boring: IR01B028  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/08/1992  
 Elevation: GS 6.55 feet  
 Total Depth: 21.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
6		9219AH42-P
5		
11		
17	0	9219H142
12		
11		
10	30	9219H143
4		
4		
14	8	9219H144
6		
11		
50	2	9219H145
11		
15		
50	6	9219H146
23		
31		
20	4	9219H147
4		
1		
1	80	9219H148



OLIVE BROWN SAND WITH SILT AND GRAVEL (SW-SM)  
 2.5Y4/3, loose to medium dense, dry to moist,  
 70-90% sand, trace to 20% fine to medium  
 gravel, 10% silt, fill

VERY DARK GRAYISH BROWN GRAVELLY LEAN CLAY (CL)  
 2.5Y3/2, stiff, moist,  
 60% clay, 30% well-graded chert and  
 serpentine gravel, 10% fine-grained sand,  
 fill

Asphalt debris at 2 ft.

BLACK POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)  
 5Y2.5/1, medium dense to loose, wet,  
 50% fine-grained sand, 40% well-graded  
 gravel, 10% silt, trace wood and  
 brick debris, fill

BLACK CLAYEY GRAVEL WITH SAND (GC)  
 N2/0, loose to medium dense, wet,  
 60-70% well-graded subrounded asphalt,  
 10-20% fine-grained sand, 20% lean clay,  
 fill

DARK BROWN WELL-GRADED GRAVEL WITH SAND (GW)  
 7.5YR3/2, loose, wet,  
 70% chert gravel, (some concrete, few  
 asphalt) 30% fine- to medium-grained sand,  
 fill

No asphalt at 10 feet.

DARK GREENISH GRAY CLAYEY GRAVEL (GC)  
 5G4/1, medium dense to loose, moist,  
 70-90% well-graded mostly chert gravel,  
 10-30% soft lean clay, fill

DARK GREENISH GRAY FAT CLAY (CH)  
 5GY4/1, stiff to medium stiff, moist,  
 80-90% clay, 10% silt, trace to few shell  
 fragments, Bay Mud Deposits

Bottom of boring 21.5 feet. Boring  
 backfilled with bentonite cement grout  
 (5/8/92).



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Log of Boring IR01B028

PLATE

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

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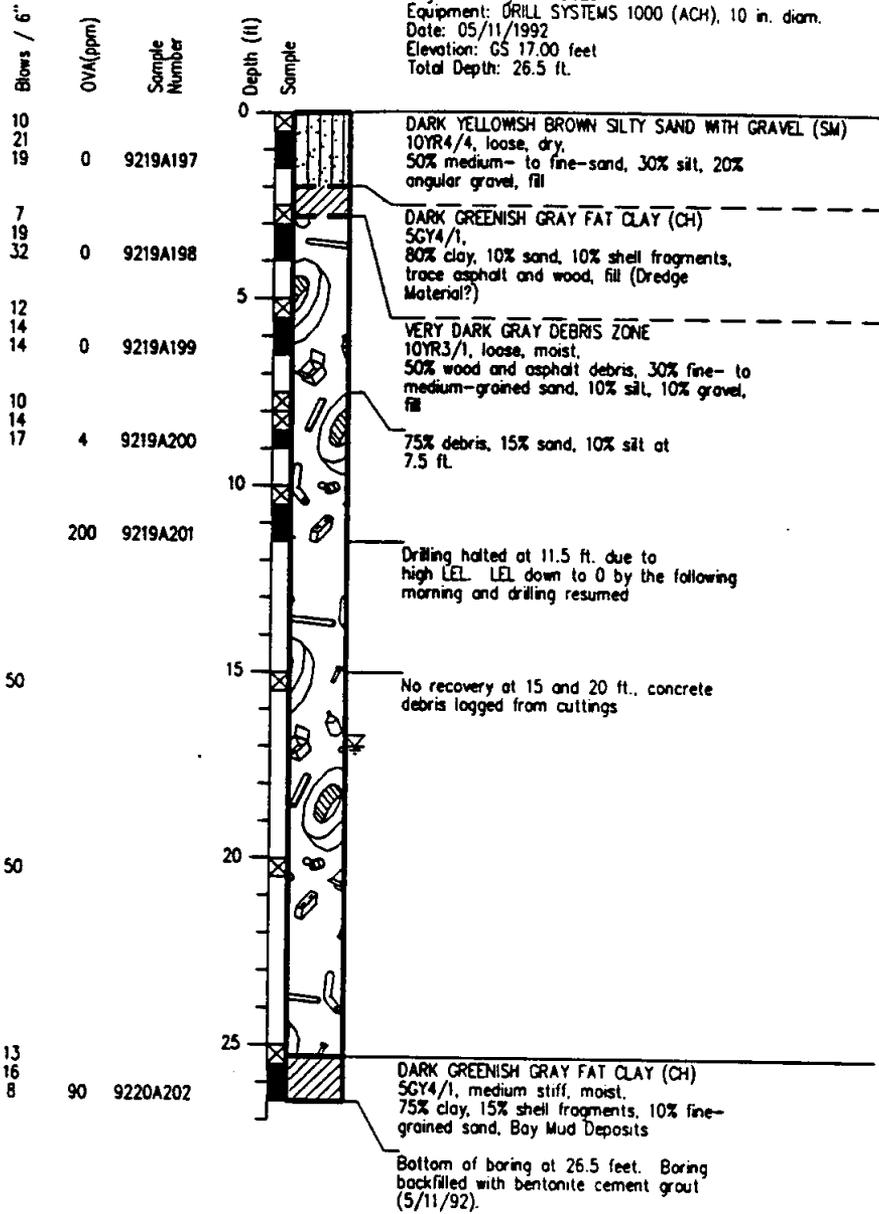
JOB NUMBER

APPROVED

DATE  
 11/09/92

REVISED DATE

Log of Boring: IR01B029  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/11/1992  
 Elevation: GS 17.00 feet  
 Total Depth: 26.5 ft.



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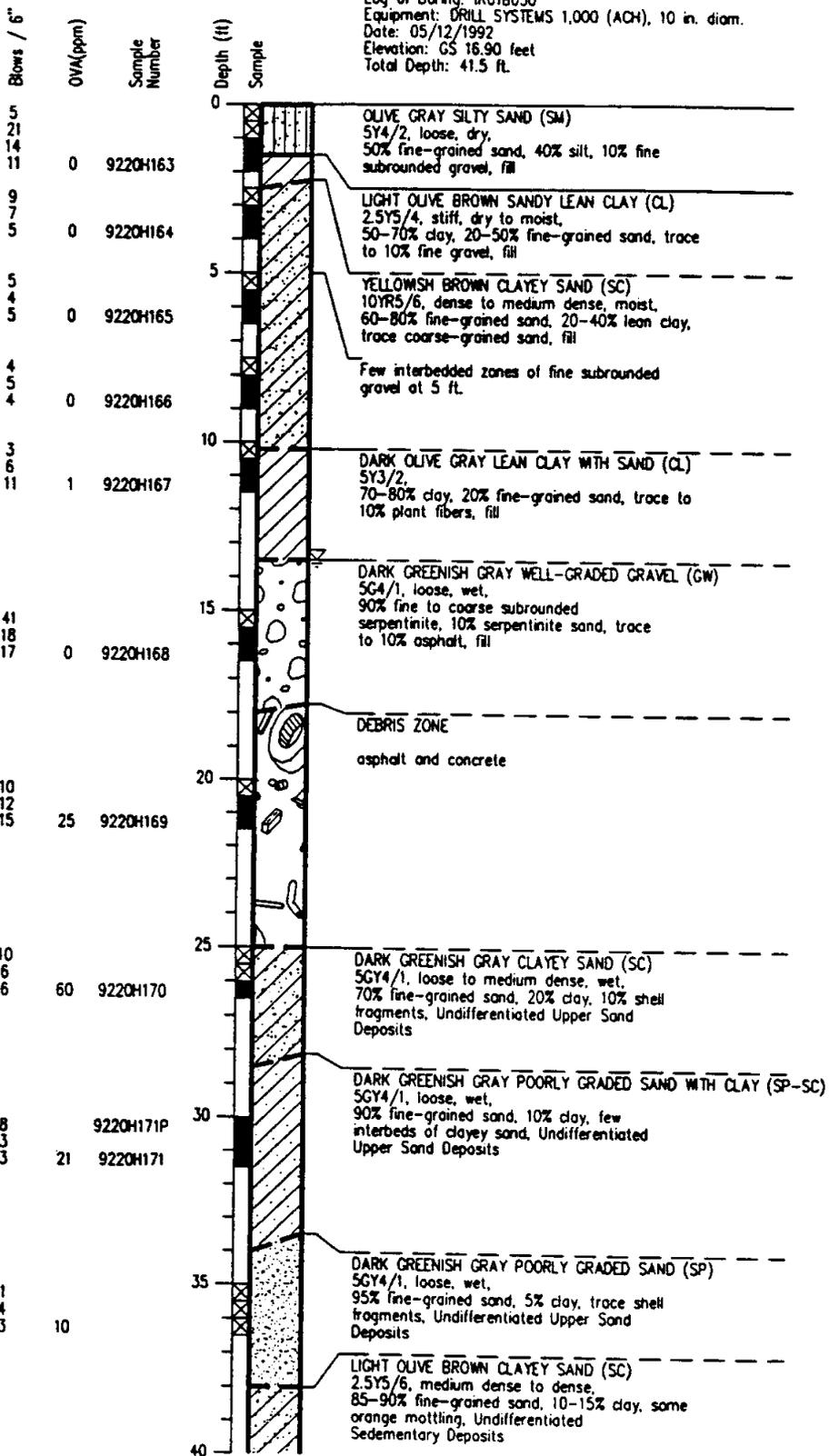
Log of Boring IR01B029

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 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
mf			11/13/92	

Log of Boring: IR01B030  
 Equipment: DRILL SYSTEMS 1,000 (ACH), 10 in. diam.  
 Date: 05/12/1992  
 Elevation: GS 16.90 feet  
 Total Depth: 41.5 ft.



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Log of Boring IR01B030

PLATE

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

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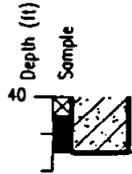
APPROVED

DATE  
 11/09/92

REVISED DATE

Log of Boring: IR01B030 (p. 2)  
 Equipment: DRILL SYSTEMS 1,000 (ACH), 10 in. diam.  
 Date: 05/12/1992  
 Elevation: GS 16.90 feet  
 Total Depth: 41.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
16.9	0	9220H172
32		



Bottom of boring at 41.5 feet. Boring backfilled with bentonite cement grout (4/12/92). Grab water sample 9220H162 collected.



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Log of Boring IR01B030

PLATE

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

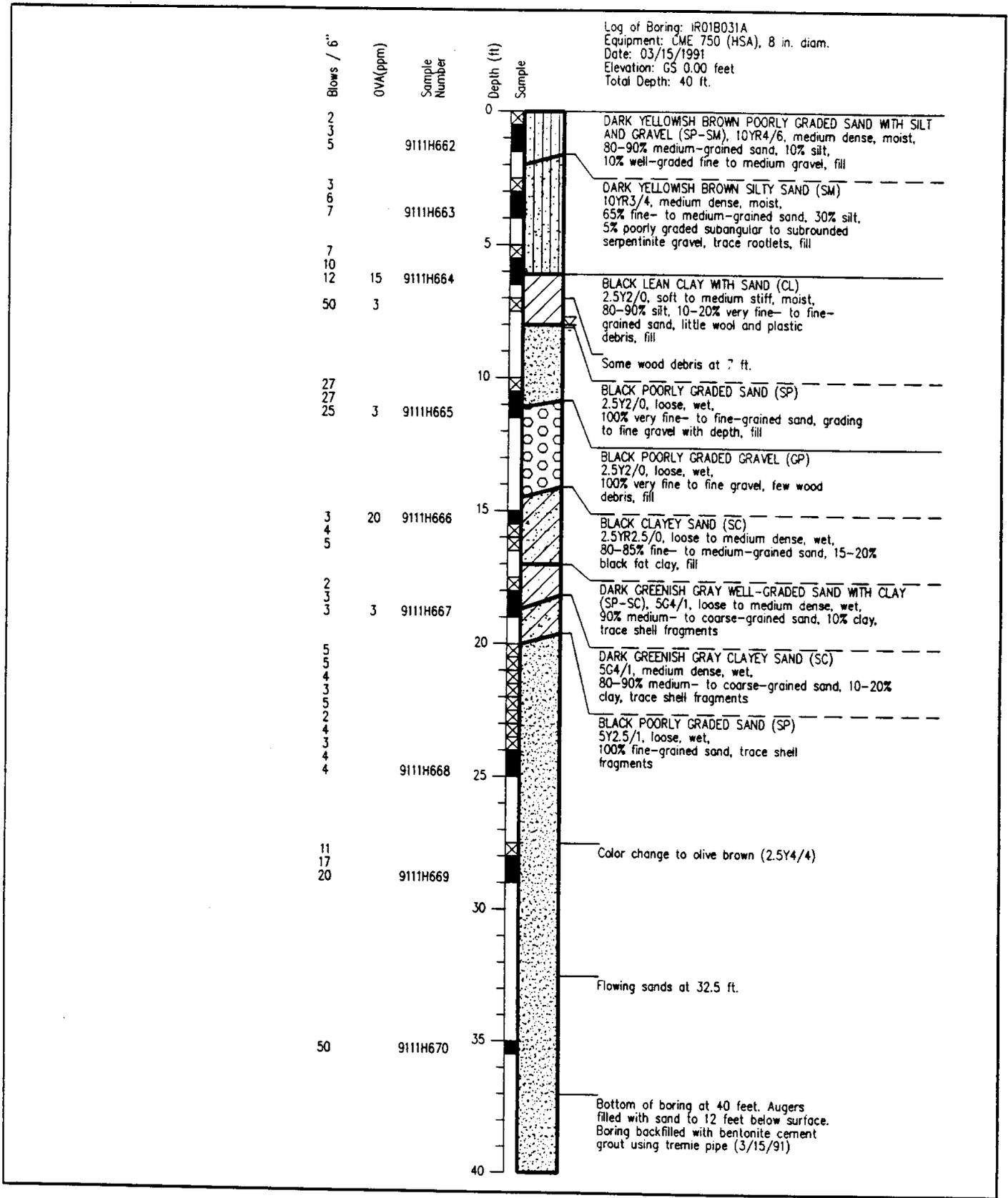
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JOB NUMBER

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DATE  
 11/09/92

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Log of Boring IR01B031A  
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PLATE

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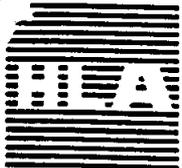
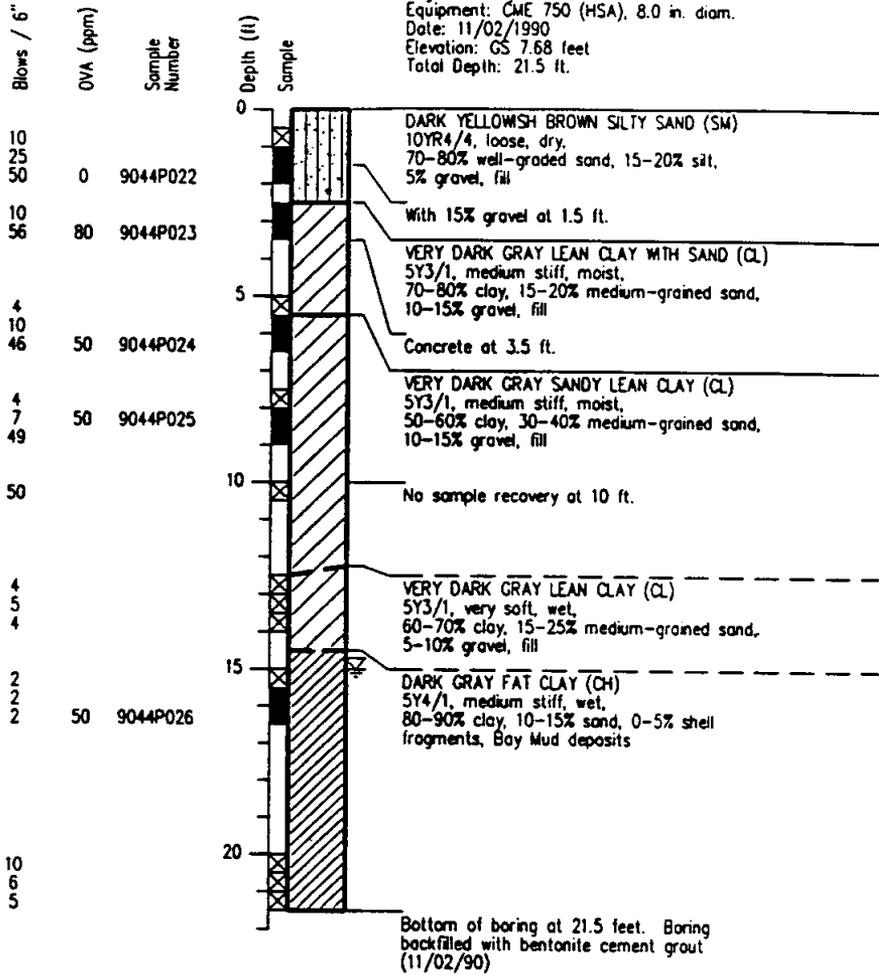
JOB NUMBER

APPROVED

DATE  
 1/94

REVISED DATE

Log of Boring: IR01B032  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/02/1990  
 Elevation: GS 7.68 feet  
 Total Depth: 21.5 ft.



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Log of Boring: IR01B032  
 Primary Phase Remedial Investigation  
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PLATE

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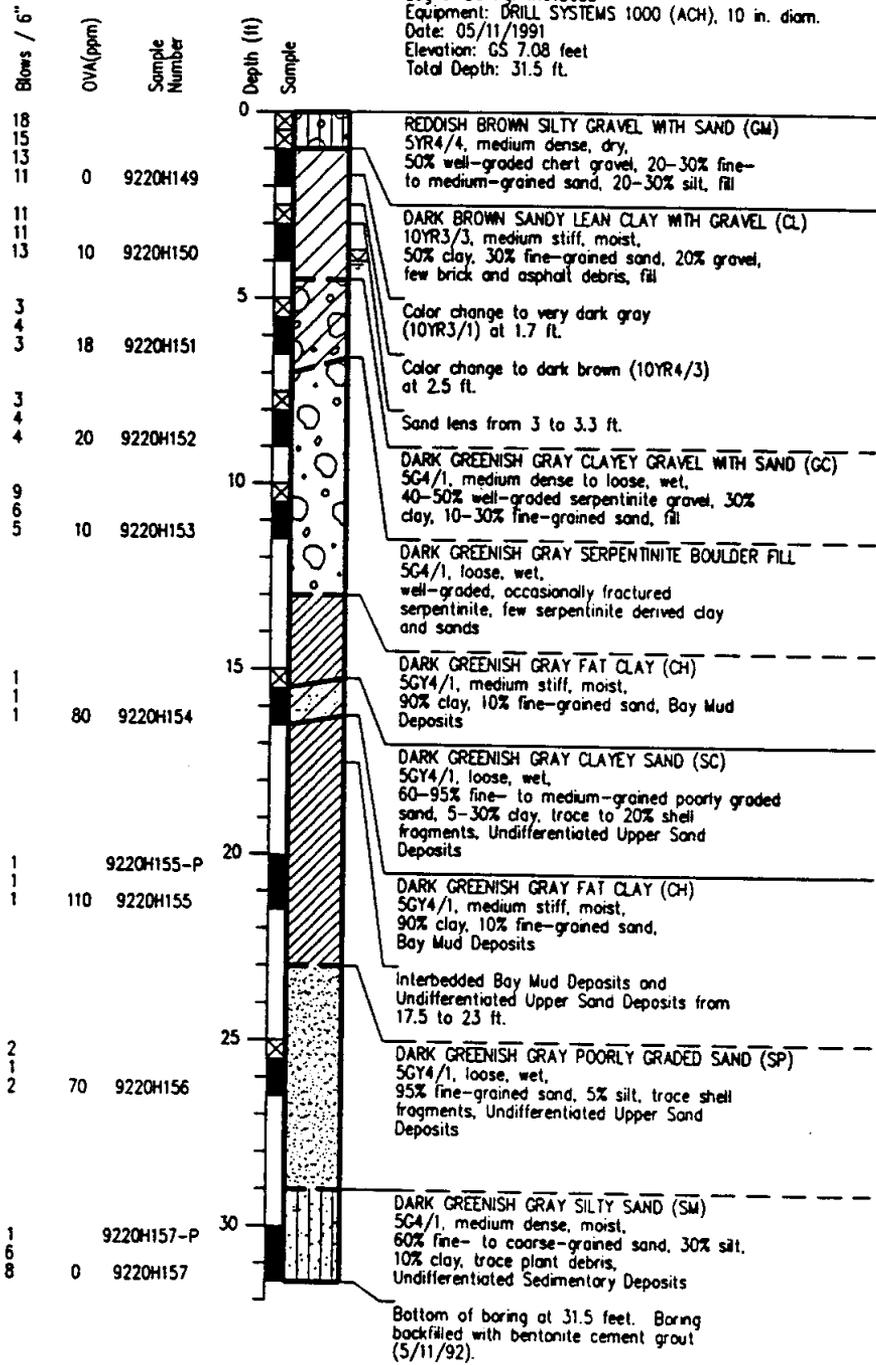
JOB NUMBER  
18639,160.02

APPROVED

DATE  
5/02/91

REVISED DATE

Log of Boring: IR01B033  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/11/1991  
 Elevation: GS 7.08 feet  
 Total Depth: 31.5 ft.



Bottom of boring at 31.5 feet. Boring  
backfilled with bentonite cement grout  
(5/11/92).



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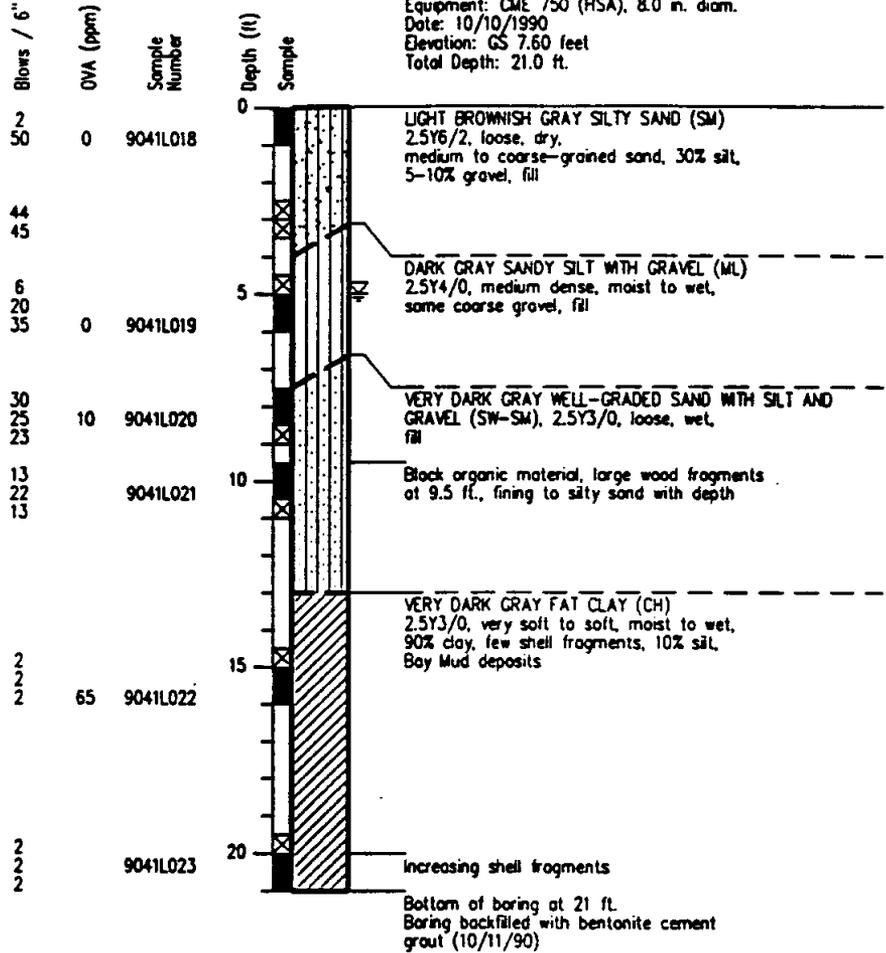
Log of Boring IR01B033

HUNTER'S POINT ANNEX  
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DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/09/92	

Log of Boring: IR018034  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/10/1990  
 Elevation: GS 7.60 feet  
 Total Depth: 21.0 ft.



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Log of Boring: IR018034  
 Primary Phase Remedial Investigation  
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PLATE

**A4**

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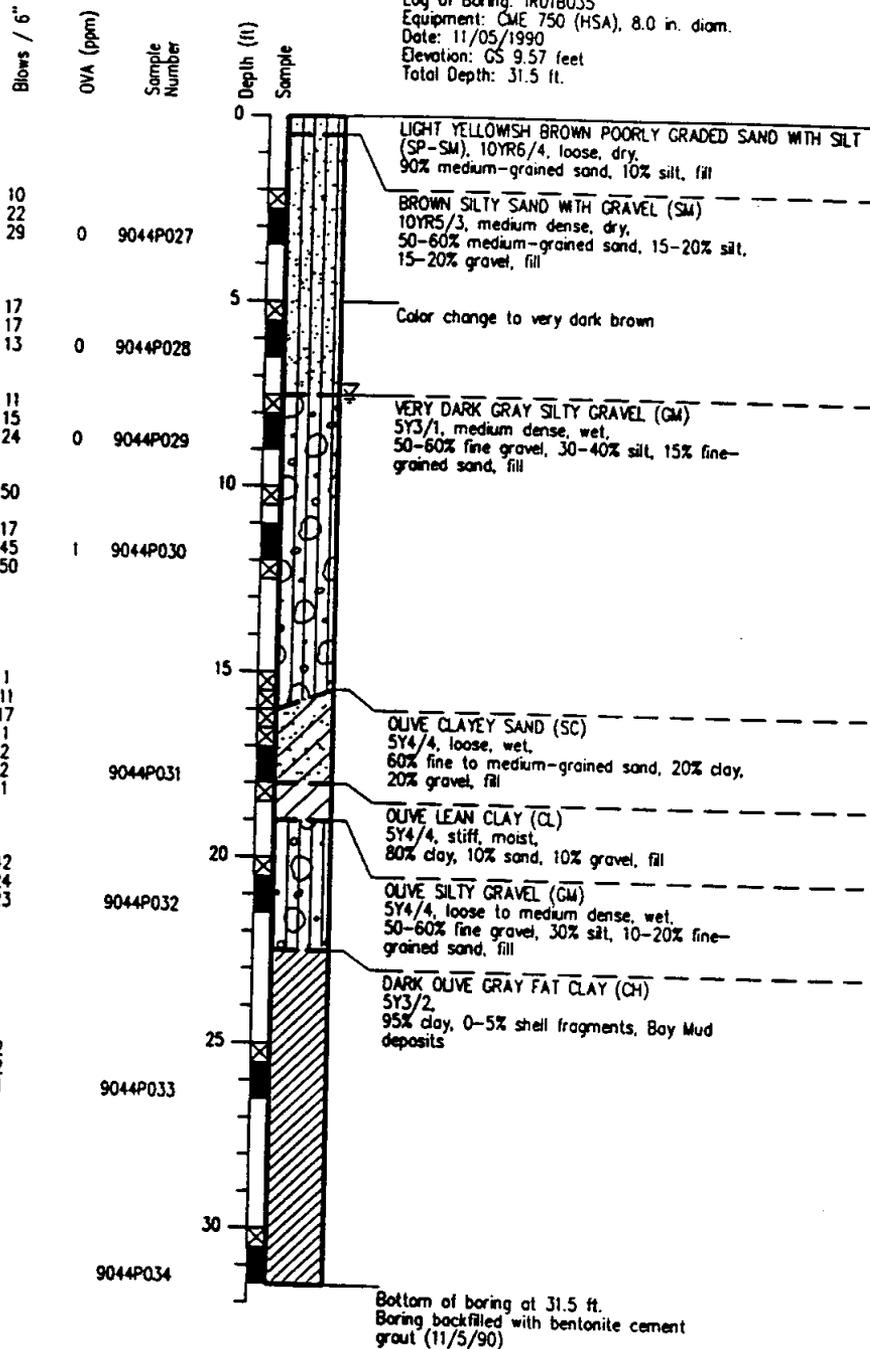
JOB NUMBER  
18639,160.02

APPROVED

DATE  
5/02/91

REVISED DATE

Log of Boring: IR01B035  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/05/1990  
 Elevation: GS 9.57 feet  
 Total Depth: 31.5 ft.



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Log of Boring: IR01B035  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
wjf

JOB NUMBER  
18639,160.02

APPROVED

DATE  
5/02/91

REVISED DATE

Blows/ft.  
 OVA (ppm)  
 Sample Number

Depth (ft.)  
 Sample

Log of Boring: IROIB036  
 Equipment: FAIRING 1250 (MDR) 5.00  
 Elevation: GS 10.64 ft.  
 Date: 12/15/1988  
 Total Depth: 158.00 ft.



DARK BROWN SILT WITH SAND (ML)  
 10YR3/3, medium dense, moist,  
 with 25-30% very fine-grained sand, fill

DARK OLIVE GRAY GRAVELLY CLAY WITH SAND (CL)  
 5Y3/2, soft, wet,  
 with 40% angular gravel to 10 inches in  
 diameter

REFUSE  
 95% wood chips, 10% gravel

50% angular gravel cuttings, 50% refuse,  
 glass, plastic sheeting, wood, brick

VERY DARK GRAY SILT (MH)  
 5Y3/1 soft, saturated,  
 with 3-5% broken shells, Bay Mud deposits

Temporary conductor casing set to 22 ft.

Begin 94mm continuous coring at 27 ft.

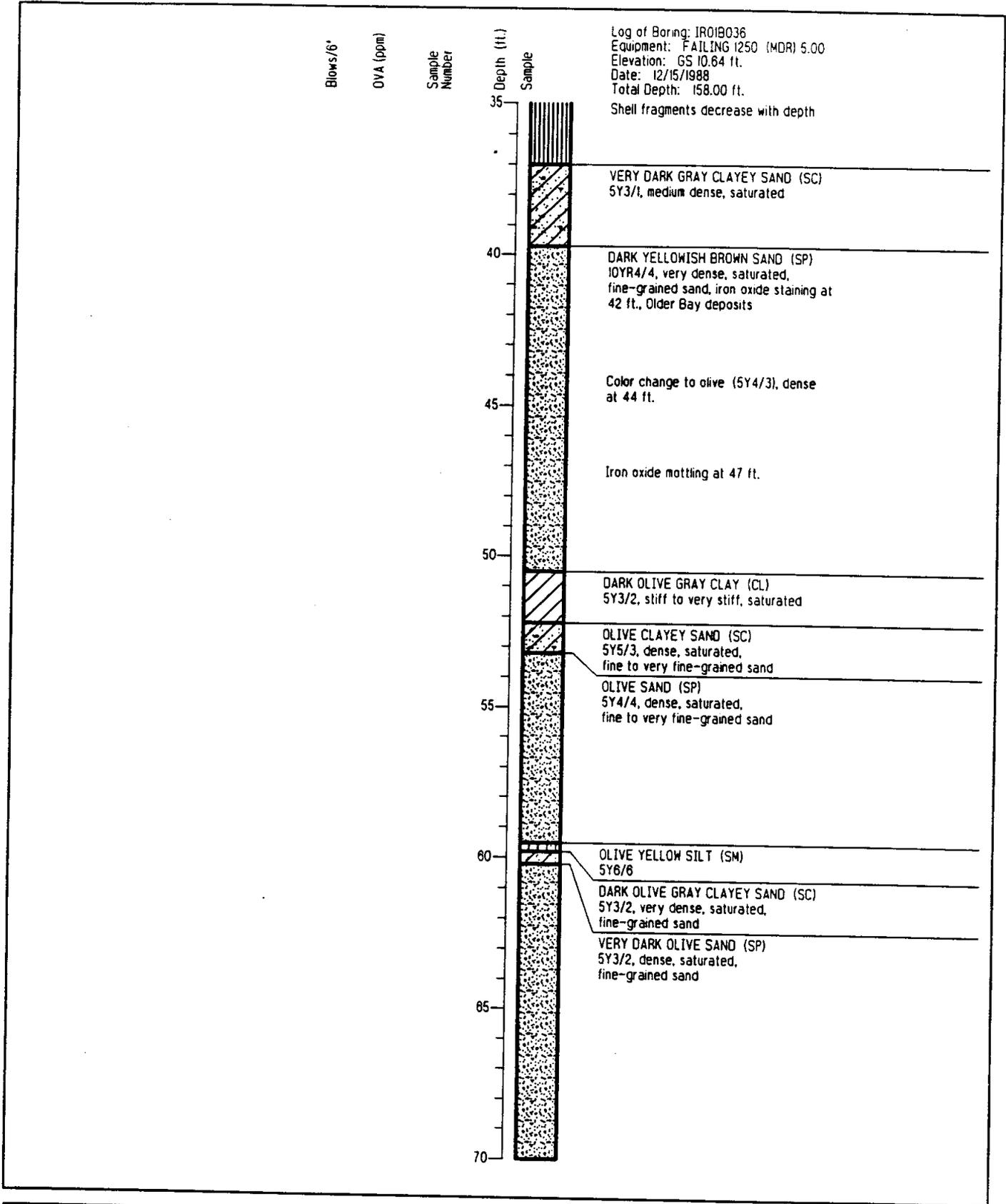


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Log of Boring IROIB036  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

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GDT			01/94	

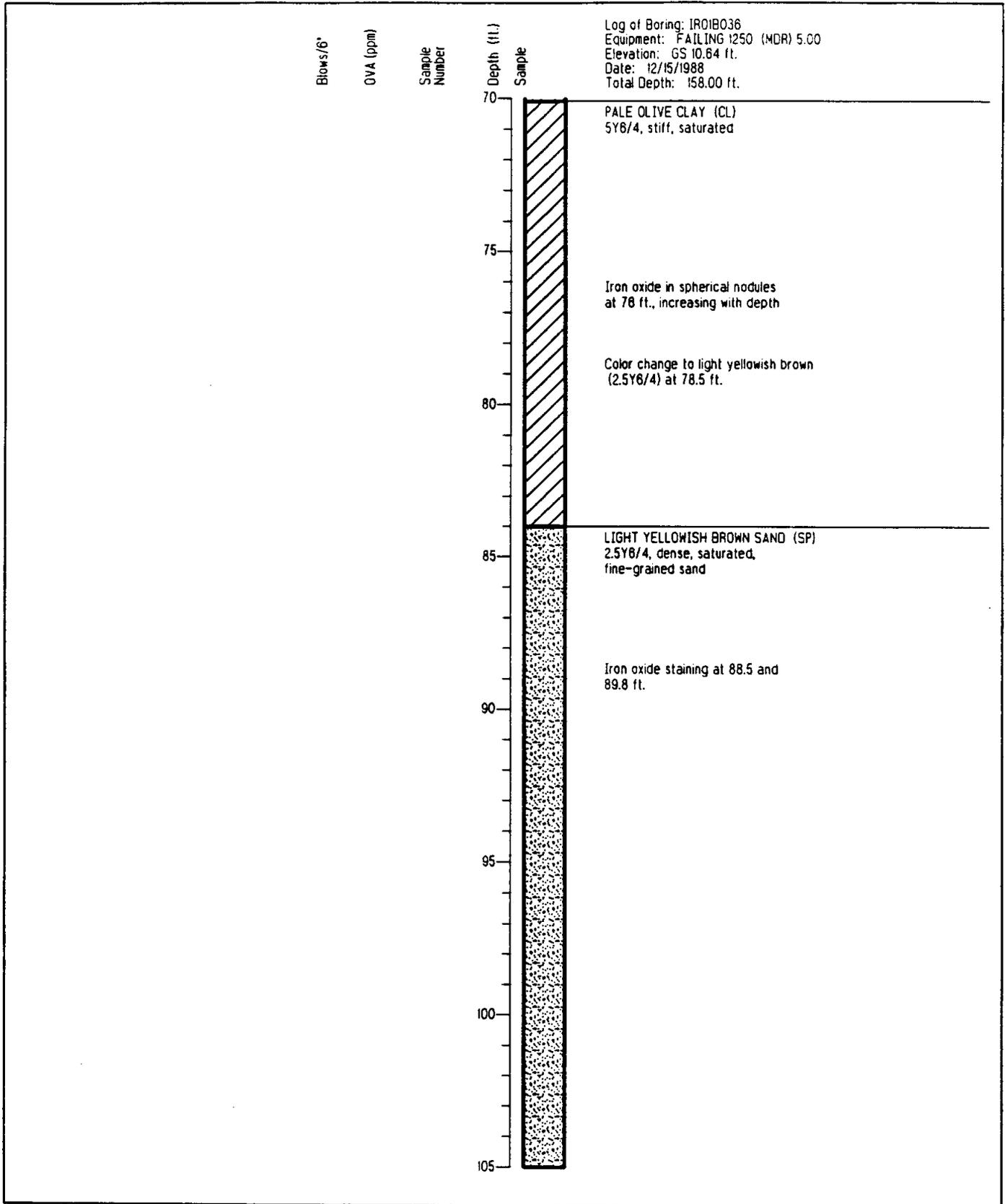


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Log of Boring IRO1B036  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

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Log of Boring IR01B036  
 Naval Station, Treasure Island  
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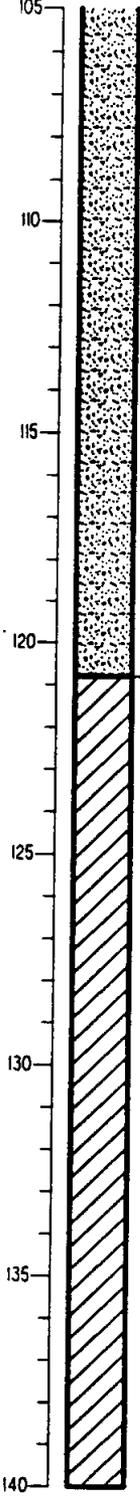
DATE  
 01/94

REVISED DATE

Blows/6"  
 OVA (ppm)  
 Sample Number

Depth (ft.)  
 Sample

Log of Boring: IR01B036  
 Equipment: FALLING 1250 (MDR) 5.00  
 Elevation: GS 10.64 ft.  
 Date: 12/15/1988  
 Total Depth: 158.00 ft.



Color change to olive gray (5Y4/2)

Deeply iron oxide stained at 118 ft.

Color change to very dark gray at 119.5 ft.

VERY DARK GRAY CLAY (CL)  
 7.5YR3/0, very stiff, saturated

With occasional gravel at 128 ft.

Traces of peat, occasional shell fragments at 135 ft.



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Log of Boring IR01B036  
 Naval Station, Treasure Island  
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DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Blows/6'

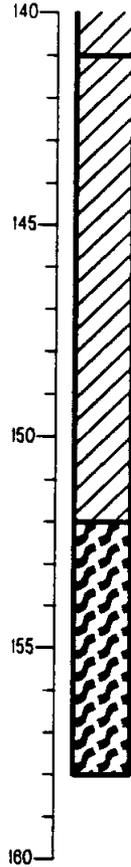
OVA (ppm)

Sample Number

Depth (ft.)

Sample

Log of Boring: IROIB036  
Equipment: FAILING 1250 (MDR) 5.00  
Elevation: GS 10.64 ft.  
Date: 12/15/1988  
Total Depth: 158.00 ft.



DARK GRAY CLAY WITH GRAVEL (CL)  
7.5YR4/0, very stiff to hard, saturated.

With calcite nodules and veinlets  
at 144 ft.

With trace to 2% angular gravel  
at 147 ft.

Angular gravel increases to 10-15%

GREENISH GRAY SERPENTINITE  
crushed to intensely fractured, sheared, low  
hardness, weak, moderately weathered  
(Franciscan Complex Bedrock)

pervasively sheared, with clay along  
shears (no visible open fractures)

Bottom of boring at 158 ft.  
(boring geophysically logged and grouted  
to surface)



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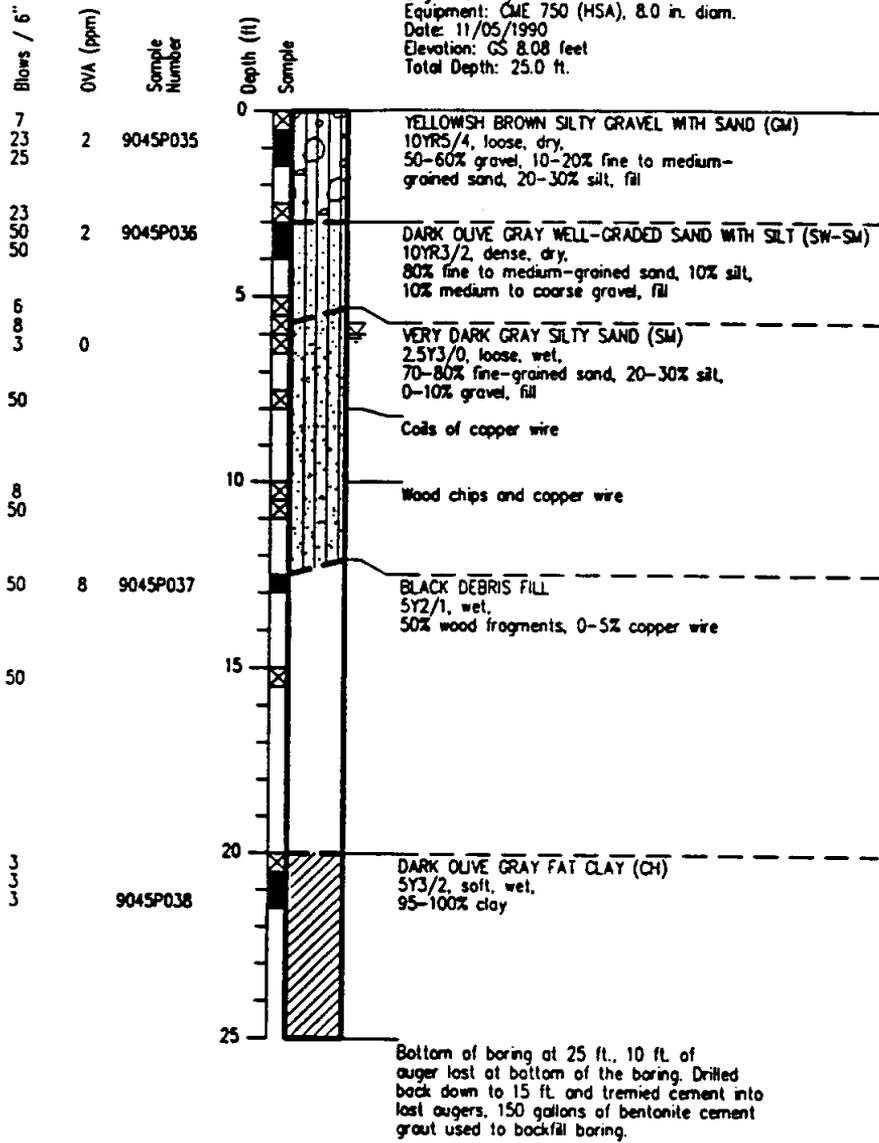
JOB NUMBER

APPROVED

DATE  
01/94

REVISED DATE

Log of Boring: IR01B039  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/05/1990  
 Elevation: GS 8.08 feet  
 Total Depth: 25.0 ft.

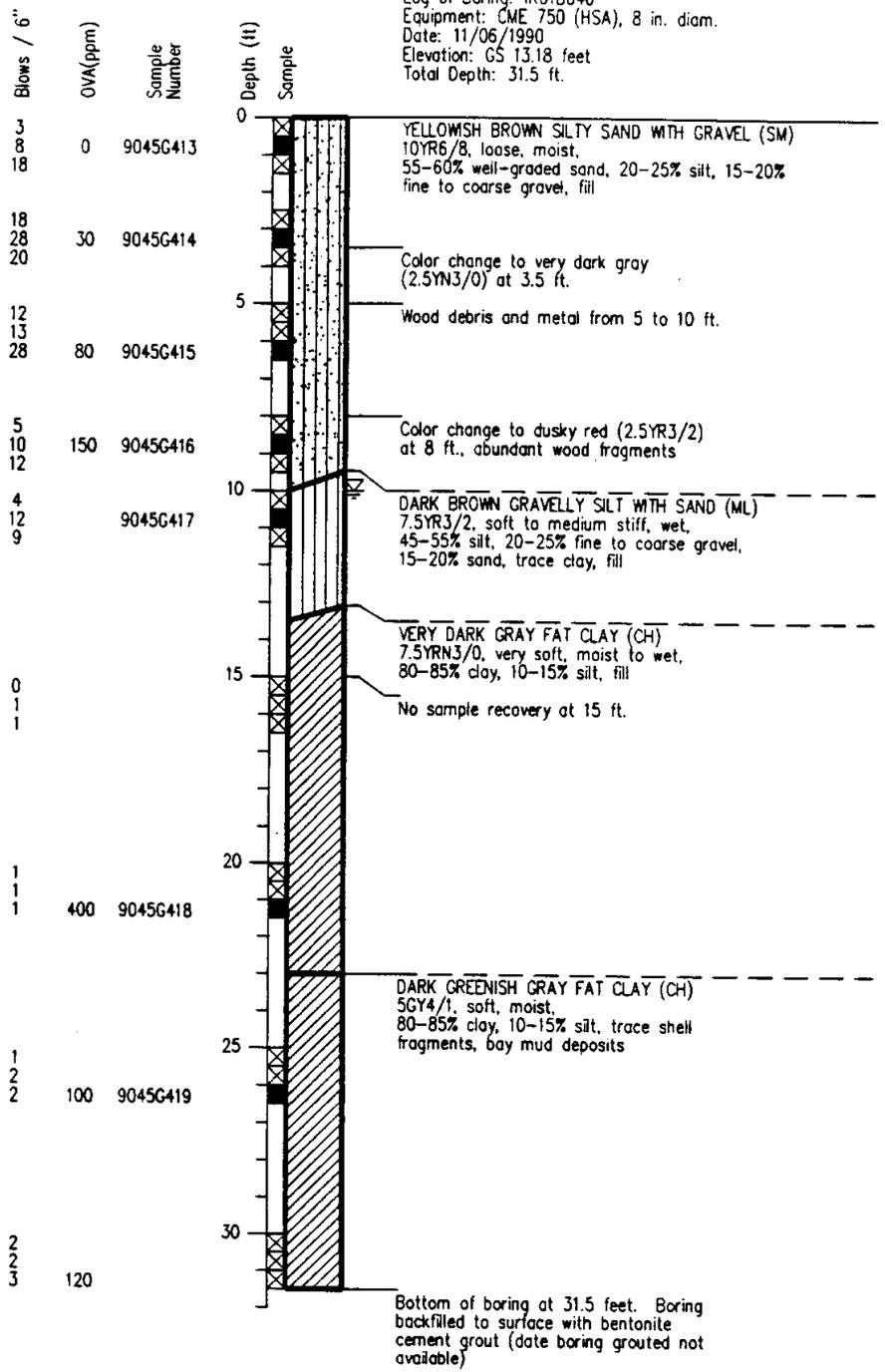


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Log of Boring: IR01B039  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE  
**A6**

Log of Boring: IR01B040  
 Equipment: CME 750 (HSA), 8 in. diam.  
 Date: 11/06/1990  
 Elevation: GS 13.18 feet  
 Total Depth: 31.5 ft.

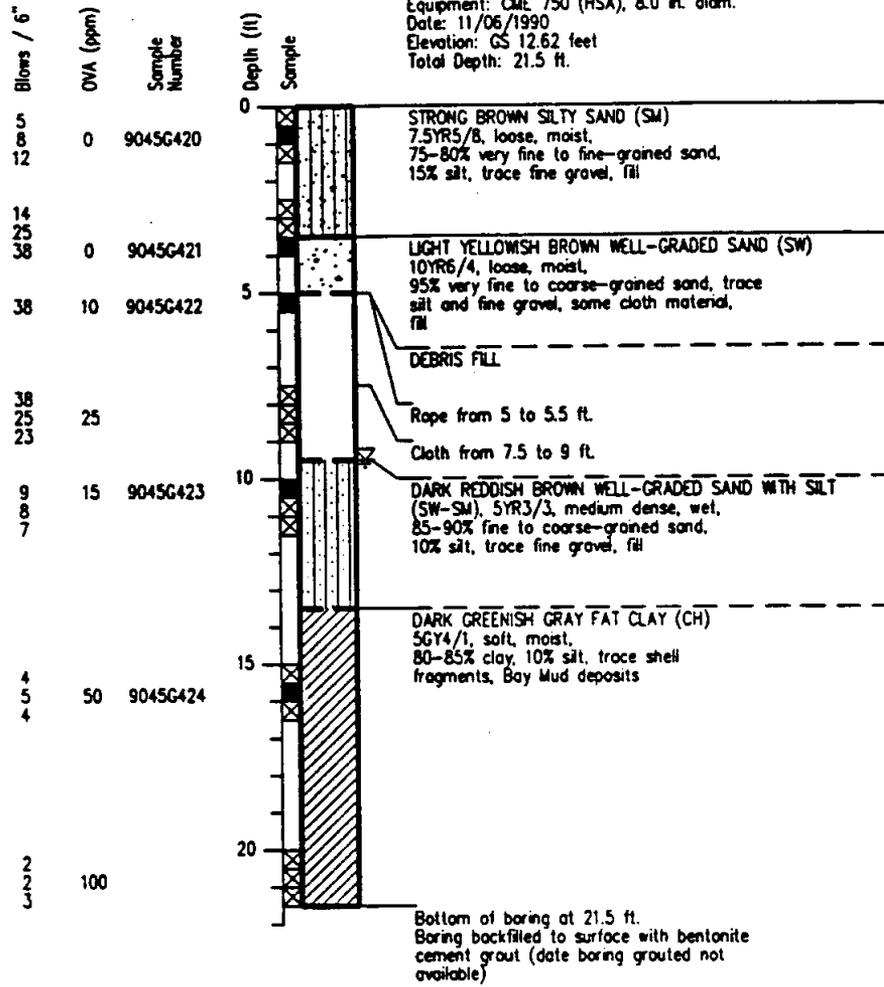


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Log of Boring IR01B040  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

Log of Boring: IR01B041  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/06/1990  
 Elevation: GS 12.62 feet  
 Total Depth: 21.5 ft.

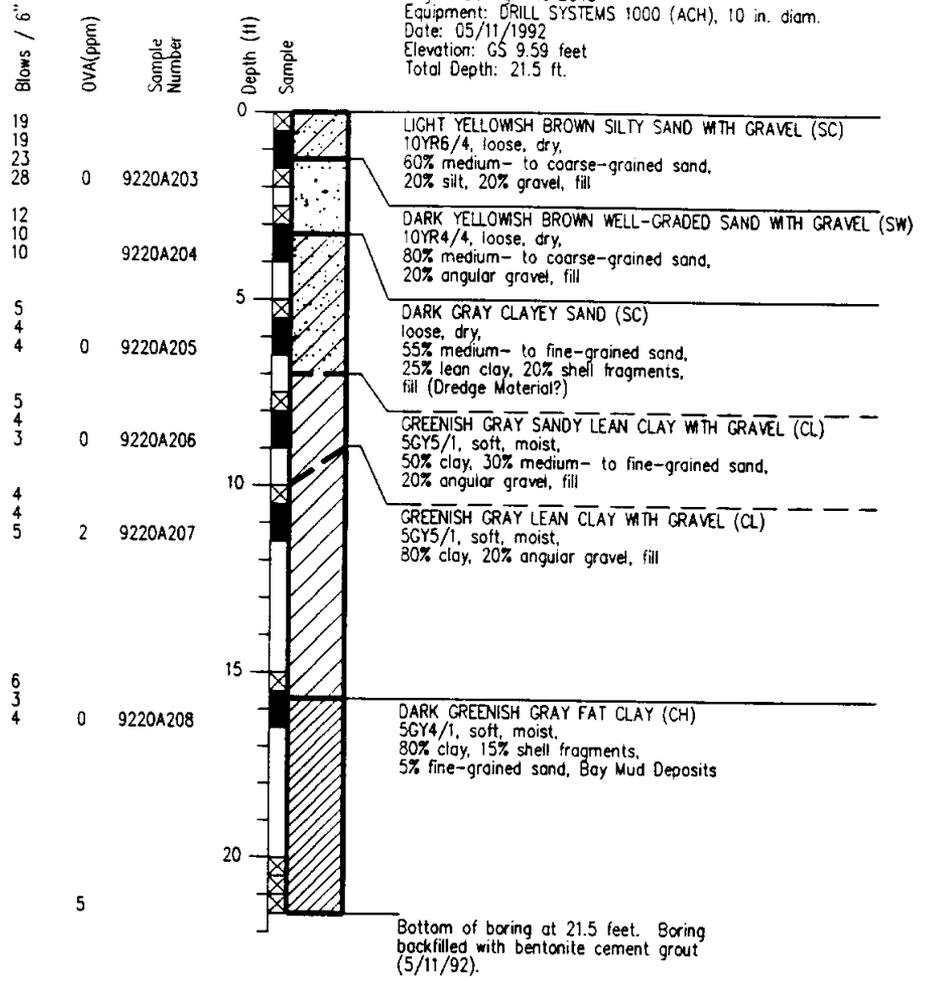


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Log of Boring: IR01B041  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE  
**A8**

Log of Boring: IR01B045  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 05/11/1992  
 Elevation: GS 9.59 feet  
 Total Depth: 21.5 ft.



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Log of Boring IR01B045  
 Naval Station Treasure Island  
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PLATE

DRAWN

JOB NUMBER

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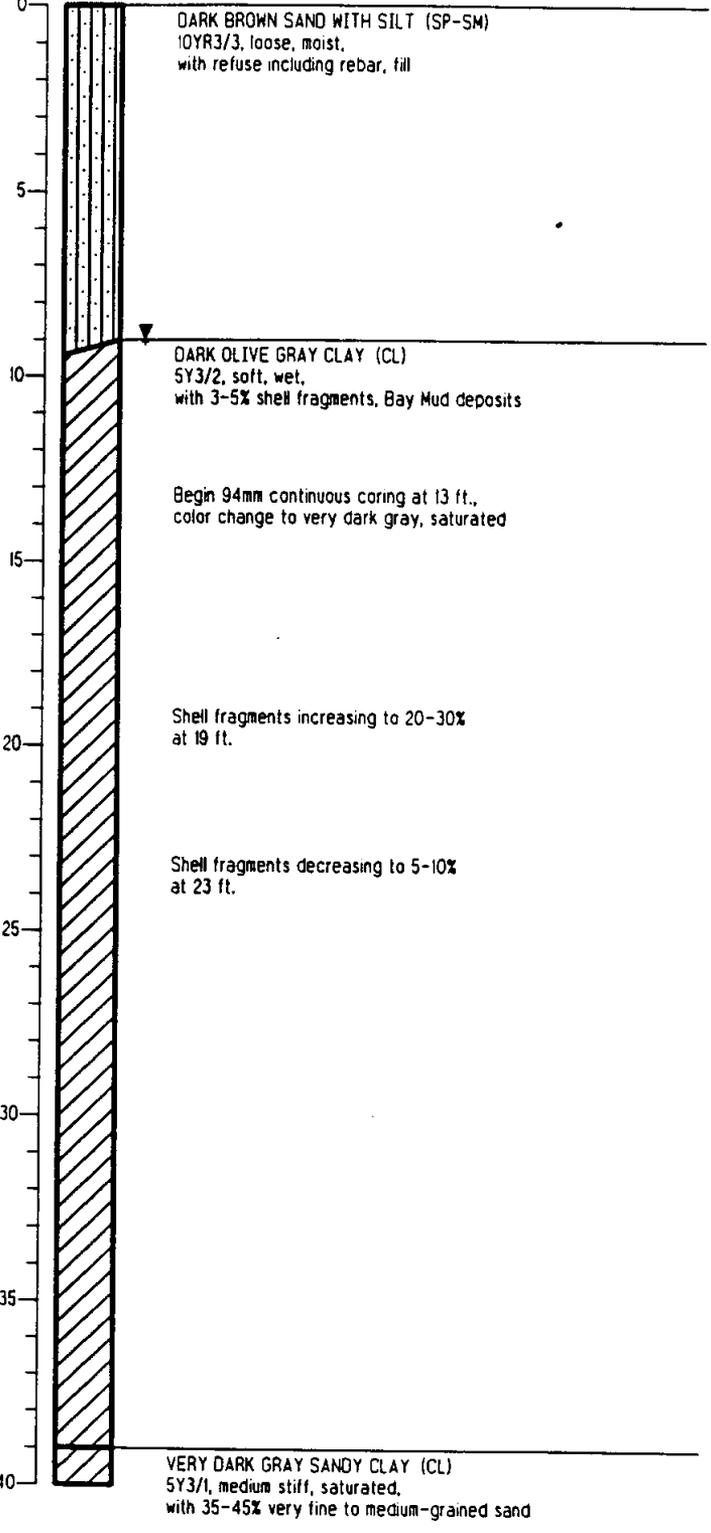
DATE  
1/94

REVISED DATE

Blows/6"  
 OVA (ppm)  
 Sample Number

Depth (ft.)

Log of Boring: IRO1B046  
 Equipment: FAILING 1250 (MDR) 5.00  
 Elevation: GS 9.86 ft.  
 Date: 11/08/1988  
 Total Depth: 223.00 ft.

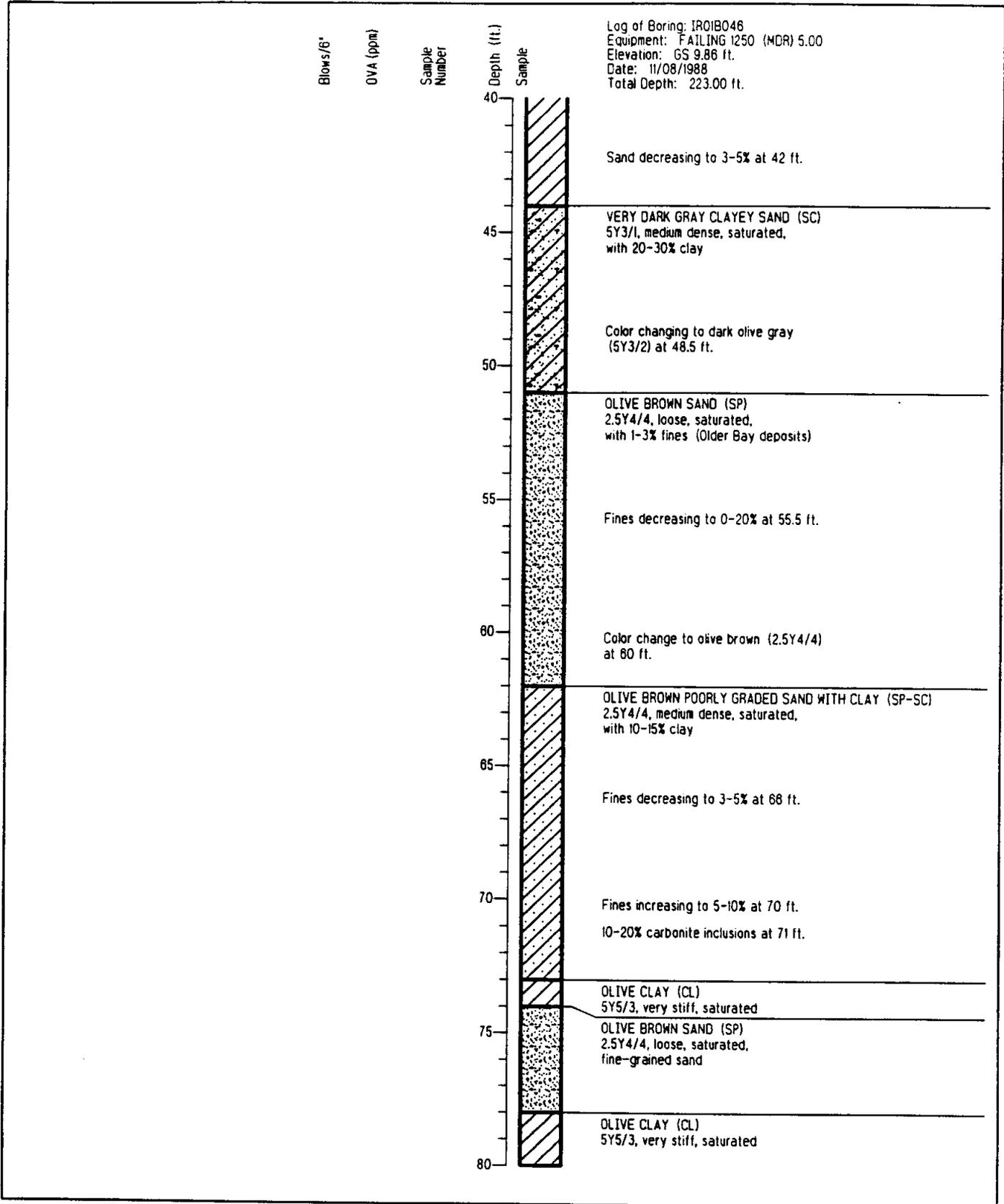


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Log of Boring IRO1B046  
 Naval Station, Treasure Island  
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PLATE

DRAWN GOT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Log of Boring IR01B046  
 Naval Station, Treasure Island  
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PLATE

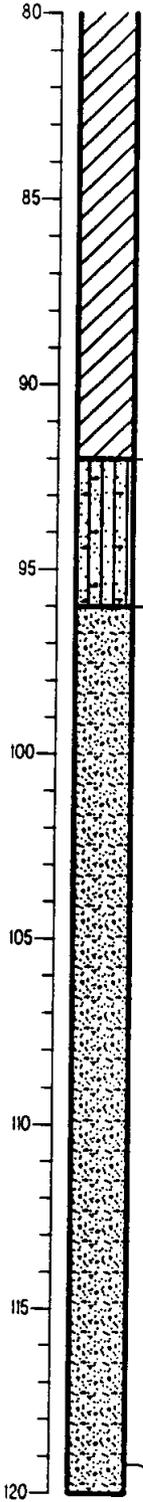
DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Blows/ft.  
 OVA (ppm)  
 Sample Number

Depth (ft.)

Sample

Log of Boring: IR01B046  
 Equipment: FAIRING 1250 (MOR) 5.00  
 Elevation: GS 9.86 ft.  
 Date: 11/08/1988  
 Total Depth: 223.00 ft.



With 10-15% fine-grained sand and occasional iron oxide stains at 89 ft.

LIGHT OLIVE BROWN SILTY SAND (SM)  
 2.5Y5/4, dense, saturated,  
 with 10-15% silt, iron oxide stained

YELLOWISH BROWN SAND (SP)  
 10YR5/8, loose, wet (saturated),  
 with 5-10% silt, with occasional interbedded  
 clay strata 0.5 to 1 inch thick

Color change to yellowish brown  
 (10YR5/4) at 105 ft.

6 inch thick clay interbeds at 115 and  
 117 ft.

Color change to grayish brown (10YR5/2)  
 at 118 ft.

Iron oxide staining to Dark Yellowish Brown  
 (10YR4/6) from 119.2 to 119.7 ft.



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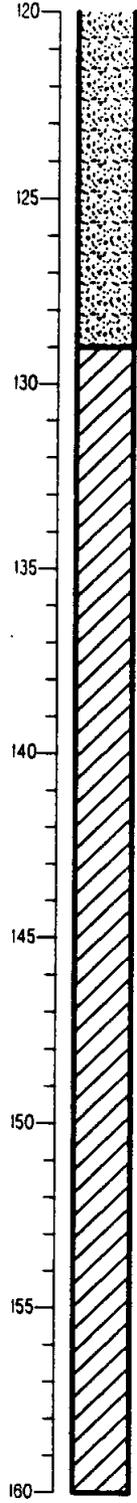
PLATE

DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Blows/6"  
OVA (ppm)  
Sample Number

Depth (ft.)  
Sample

Log of Boring: IR01B046  
Equipment: FAILING 1250 (MOR) 5.00  
Elevation: GS 9.86 ft.  
Date: 11/08/1988  
Total Depth: 223.00 ft.



Color change to Dark Olive Gray (5Y3/2) with occasional black sand interbeds

VERY DARK GRAY CLAY (CL)  
2.5YN3/0, stiff, saturated,  
with traces of peat

10-20% peat in laminations at 143 ft.

Peat decreasing to 1-2% at 159 ft.



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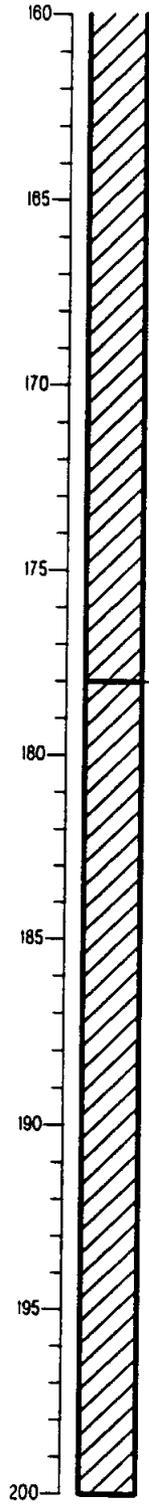
PLATE

DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Blows/6"  
 OVA (ppm)  
 Sample Number

Depth (ft.)  
 Sample

Log of Boring: IR01B046  
 Equipment: FAILING 1250 (MDR) 5.00  
 Elevation: GS 9.86 ft.  
 Date: 11/08/1988  
 Total Depth: 223.00 ft.



Peat increasing to 20% from 162.5 to 168 ft.

Color change to dark gray (5Y4/1) with 5-10% very fine-grained sand, 3-5% peat

DARK GRAY GRAVELLY CLAY WITH SAND (CL)  
 5Y4/1, very stiff, saturated,  
 with 30-40% subangular gravel to 1 inch in diameter

Gravel decreasing to trace

Gravel increasing to 10-15%

Gravel decreasing to 10-15%

Color change to olive gray (5Y5/2)  
 at 198 ft., with calcite inclusions

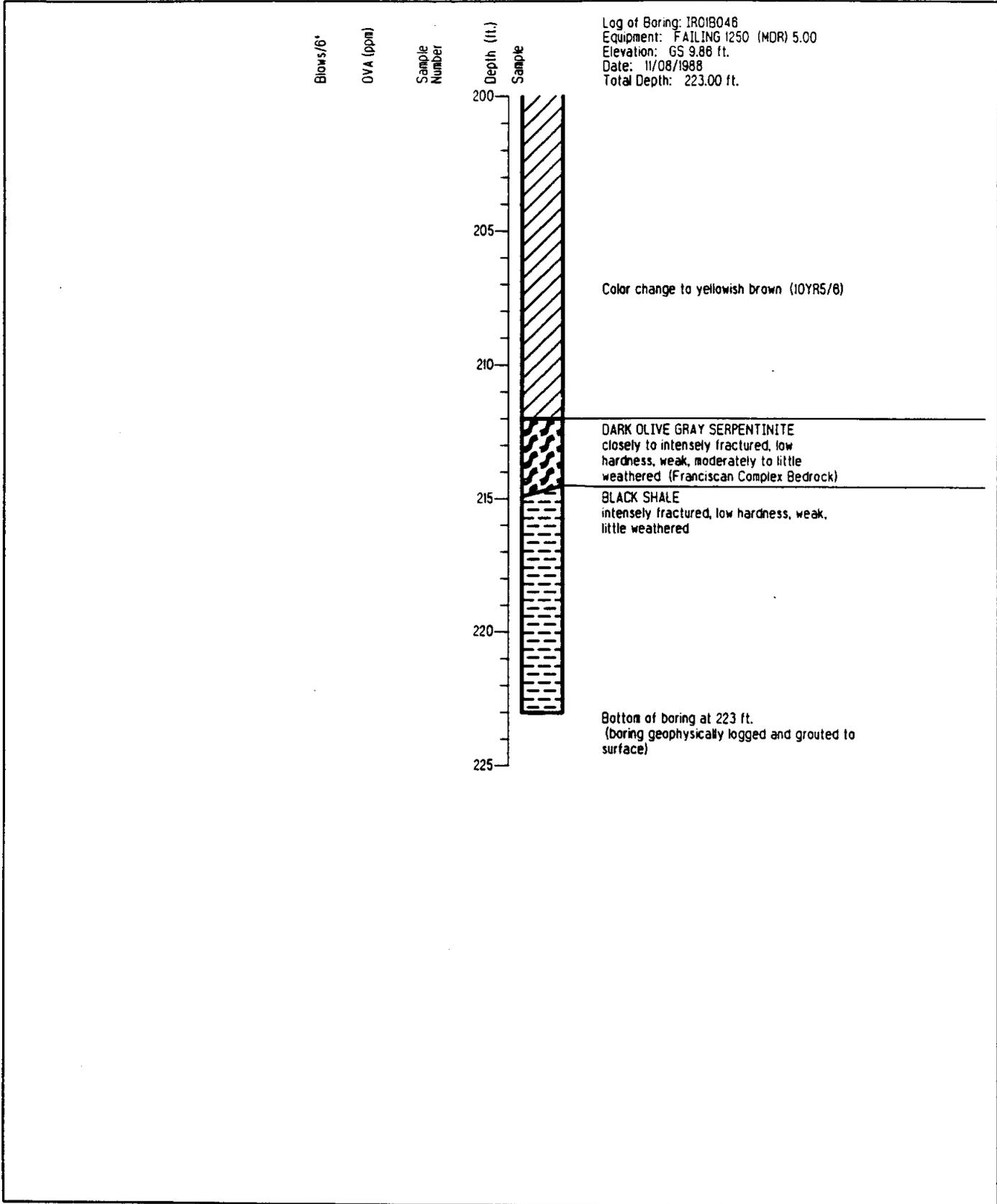


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DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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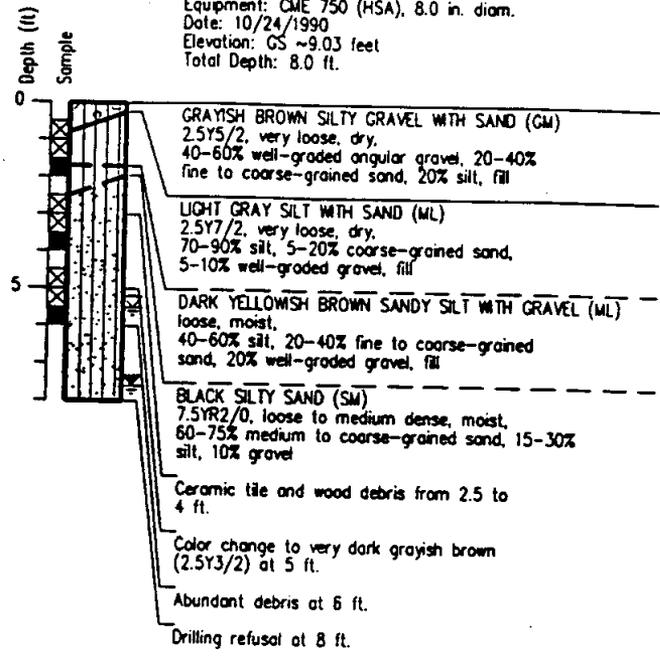
Log of Boring IR01B046  
 Naval Station, Treasure Island  
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 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
GOT			01/94	

Log of Boring: IR01B048A  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/24/1990  
 Elevation: GS ~9.03 feet  
 Total Depth: 8.0 ft.

Blows / 6"	OVA (ppm)	Sample Number
2		
4		
9	0	9043H323
10		
15		
17	2	9043H324
15		
41		
50	5	9043H325



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Log of Boring: IR01B048A  
 Primary Phase Remedial Investigation  
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PLATE

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 GDT

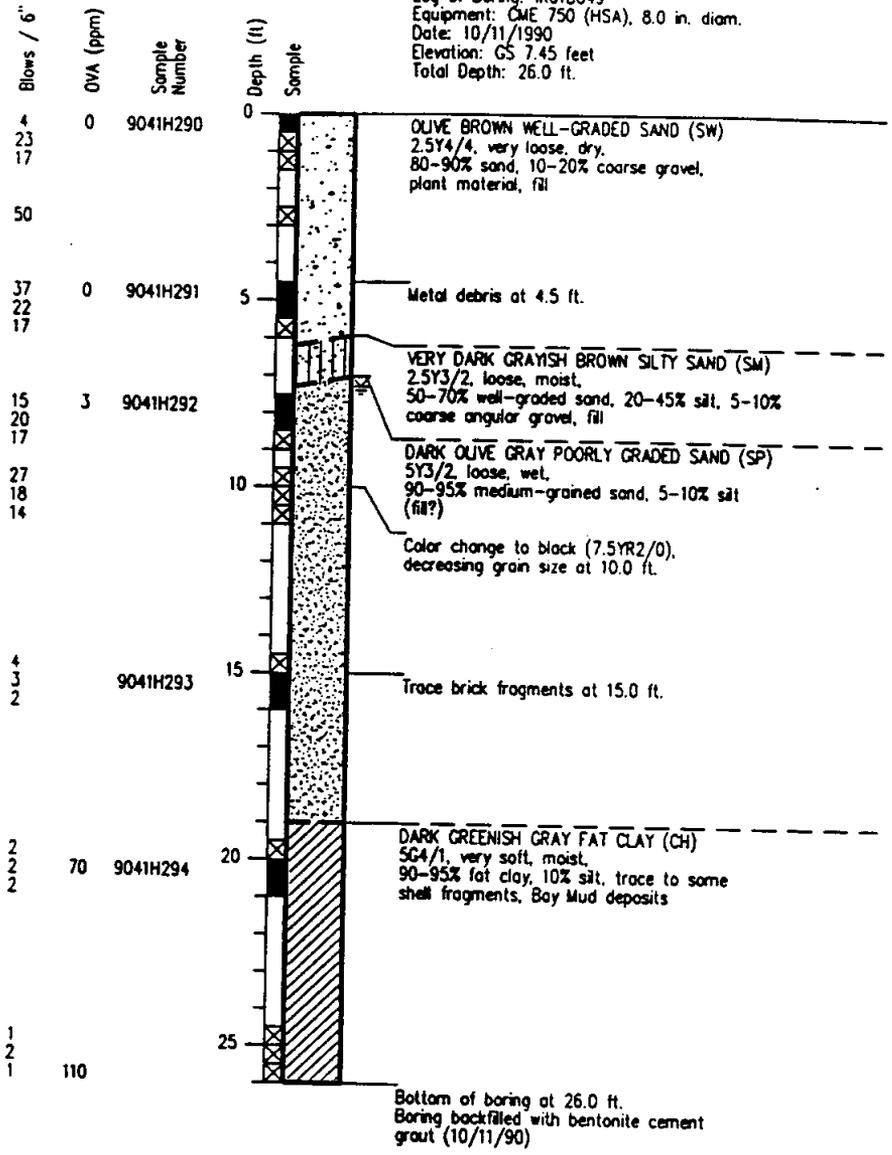
JOB NUMBER  
 18639,160.02

APPROVED

DATE  
 5/91

REVISED DATE

Log of Boring: IR01B049  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/11/1990  
 Elevation: GS 7.45 feet  
 Total Depth: 26.0 ft.



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Log of Boring: IR01B049  
 Primary Phase Remedial Investigation  
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PLATE

DRAWN  
wif

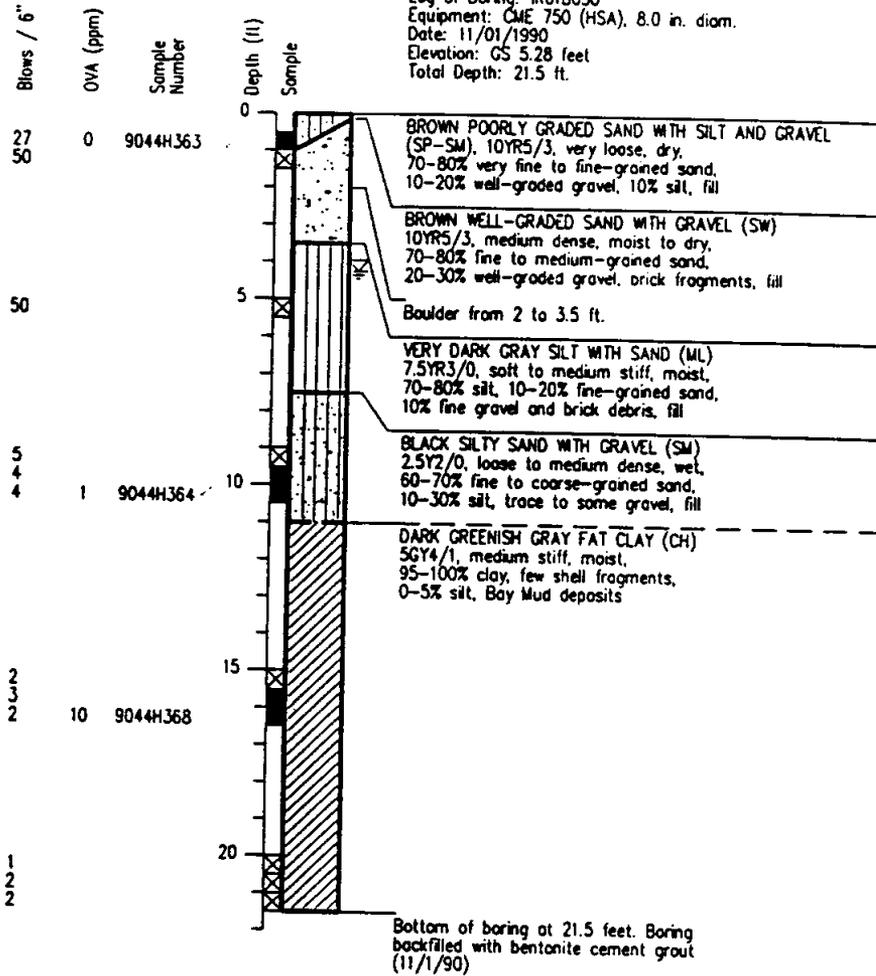
JOB NUMBER  
18639,160.02

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5/02/91

REVISED DATE

Log of Boring: IR01B050  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/01/1990  
 Elevation: GS 5.28 feet  
 Total Depth: 21.5 ft.



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Log of Boring: IR01B050  
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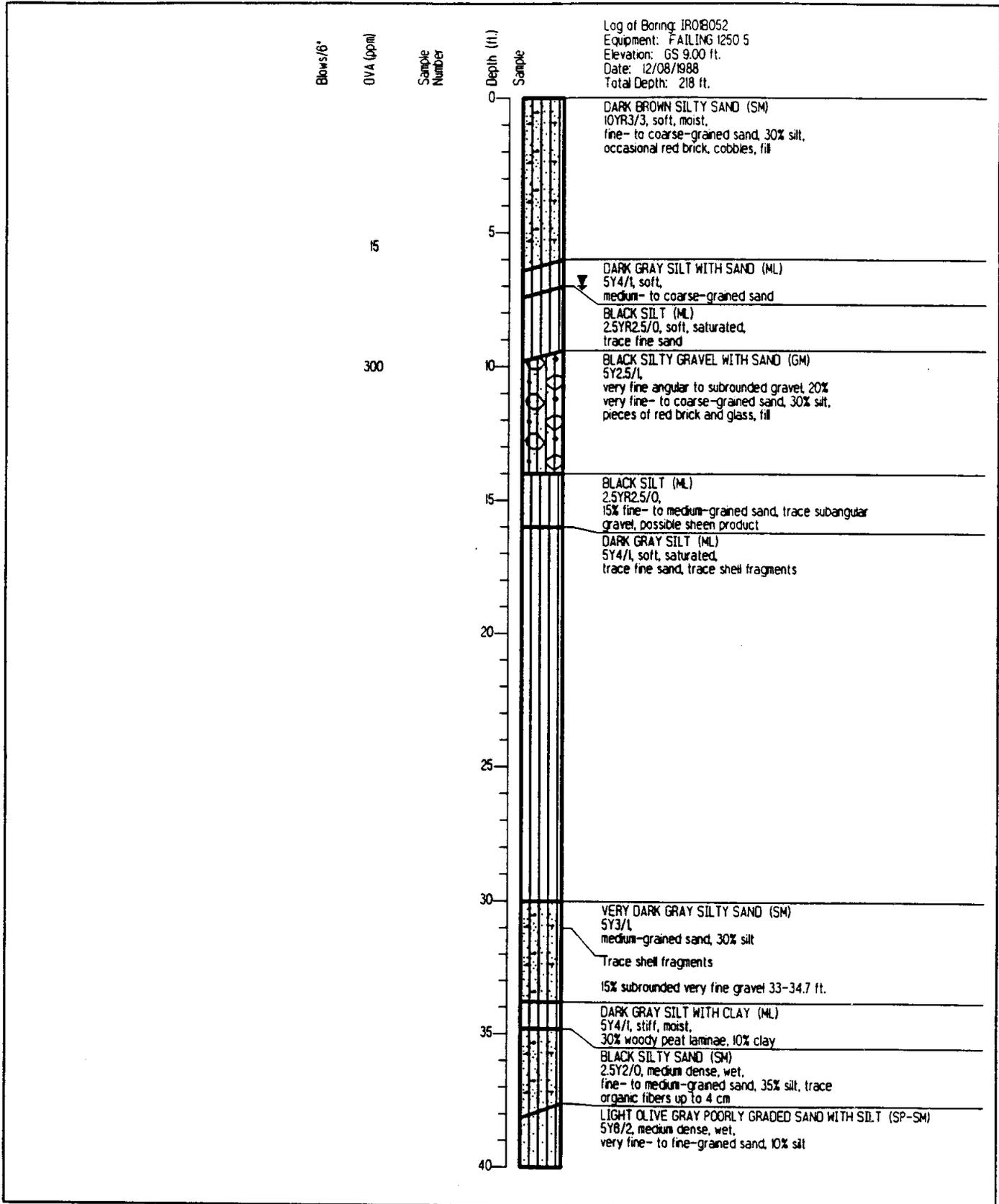
DRAWN  
 GDT

JOB NUMBER  
 18639,160.02

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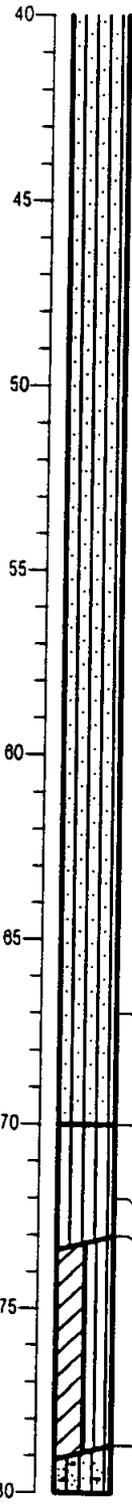
PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
GDT			01/94	

Blows/6"  
 OVA (ppm)  
 Sample Number

Depth (ft.)  
 Sample

Log of Boring: IRO1B052  
 Equipment: FAILING 1250 5  
 Elevation: GS 9.00 ft.  
 Date: 12/08/1988  
 Total Depth: 218 ft.



Color change to dark olive, occasional organic fiber  
 Increasing silt to 25% at 42 ft.  
 Color change to gray (5Y5/1)

Color change to strong brown (7.5YR5/6), 35% silt, trace iron-oxide mottling  
 Color change to yellow brown (10YR5/6)

Color change to dark red, iron-oxide staining  
 Very fine-grained sandy silt lens

LIGHT OLIVE GRAY SILT WITH SAND (ML)  
 5Y6/2, stiff, moist,  
 10% very fine-grained sand, 10% clay, trace iron-oxide stringer, trace white clay nodules

Increasing clay content to 20% at 72 ft.  
 PALE OLIVE SILTY CLAY (CL/ML)  
 5Y6/3, very stiff, moist,  
 35% silt, trace very fine-grained sand, trace iron-oxide staining and nodules

Increasing sand to 35% at 78 ft.  
 LIGHT YELLOW BROWN SILTY SAND (SM)  
 2.5Y6/4, dense, wet,  
 very fine- to fine-grained sand, 25% silt,  
 trace iron-oxide nodules and mottling

30



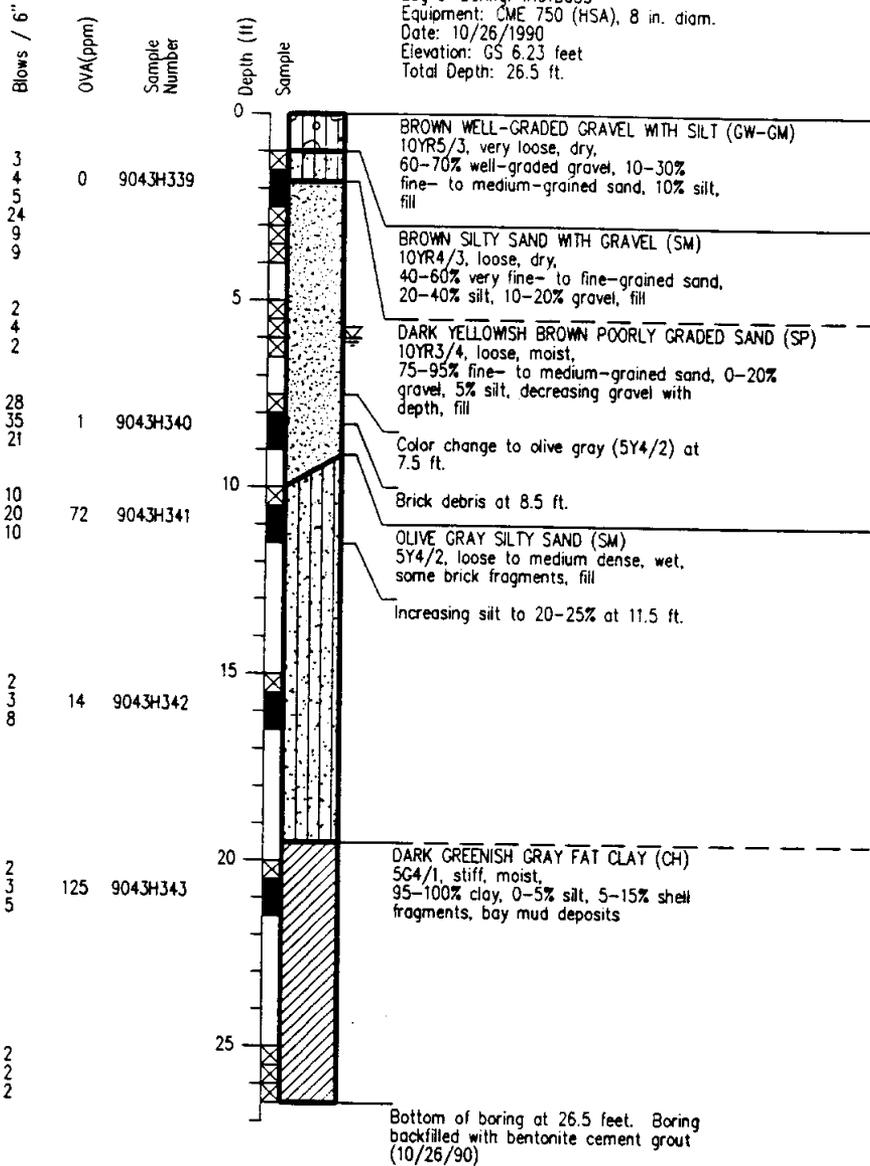
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 Naval Station, Treasure Island  
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 San Francisco, California

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DRAWN GDT	JOB NUMBER	APPROVED	DATE 01/94	REVISED DATE
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Log of Boring: IR01B055  
 Equipment: CME 750 (HSA), 8 in. diam.  
 Date: 10/26/1990  
 Elevation: GS 6.23 feet  
 Total Depth: 26.5 ft.



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PLATE

DRAWN

JOB NUMBER

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DATE  
12/93

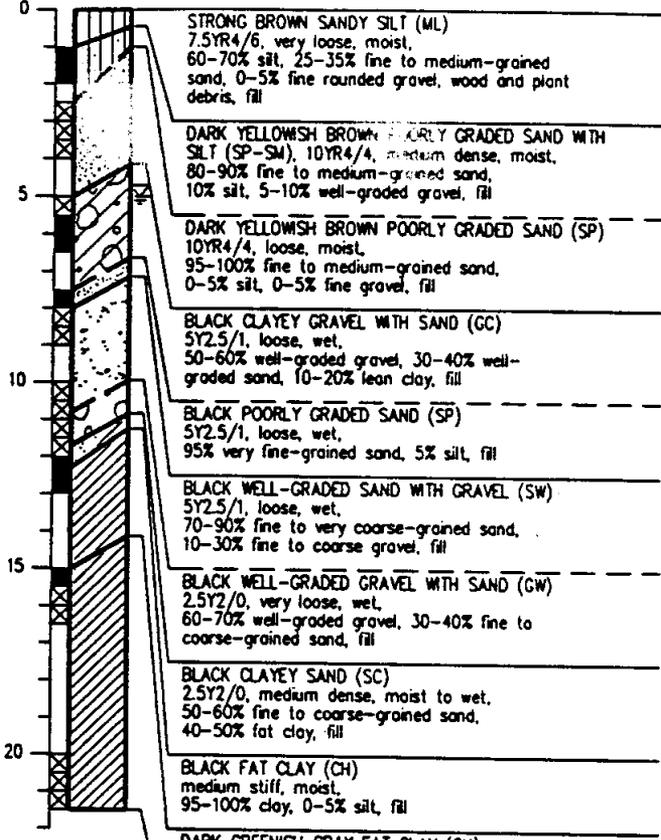
REVISED DATE

Log of Boring: IR01B056  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 11/01/1990  
 Elevation: GS 6.58 feet  
 Total Depth: 21.5 ft.

Blows / 6"  
 OVA (ppm)  
 Sample Number

Depth (ft)  
 Sample

30	0	9044H358
14		
20		
10		
20		
17	3	9044H359
6	2	9044H360
7		
6		
7		
10		
17		
3		
3		
3	20	9044H361
2		
2	15	9044H362
3		
1		
2		
1		



STRONG BROWN SANDY SILT (ML)  
 7.5YR4/6, very loose, moist,  
 60-70% silt, 25-35% fine to medium-grained  
 sand, 0-5% fine rounded gravel, wood and plant  
 debris, fill

DARK YELLOWISH BROWN POORLY GRADED SAND WITH  
 SILT (SP-SM), 10YR4/4, medium dense, moist,  
 80-90% fine to medium-grained sand,  
 10% silt, 5-10% well-graded gravel, fill

DARK YELLOWISH BROWN POORLY GRADED SAND (SP)  
 10YR4/4, loose, moist,  
 95-100% fine to medium-grained sand,  
 0-5% silt, 0-5% fine gravel, fill

BLACK CLAYEY GRAVEL WITH SAND (GC)  
 5Y2.5/1, loose, wet,  
 50-60% well-graded gravel, 30-40% well-  
 graded sand, 10-20% lean clay, fill

BLACK POORLY GRADED SAND (SP)  
 5Y2.5/1, loose, wet,  
 95% very fine-grained sand, 5% silt, fill

BLACK WELL-GRADED SAND WITH GRAVEL (SW)  
 5Y2.5/1, loose, wet,  
 70-90% fine to very coarse-grained sand,  
 10-30% fine to coarse gravel, fill

BLACK WELL-GRADED GRAVEL WITH SAND (GW)  
 2.5Y2/0, very loose, wet,  
 60-70% well-graded gravel, 30-40% fine to  
 coarse-grained sand, fill

BLACK CLAYEY SAND (SC)  
 2.5Y2/0, medium dense, moist to wet,  
 50-60% fine to coarse-grained sand,  
 40-50% fat clay, fill

BLACK FAT CLAY (CH)  
 medium stiff, moist,  
 95-100% clay, 0-5% silt, fill

DARK GREENISH GRAY FAT CLAY (CH)  
 95-100% clay, 0-5% silt, few to little shell  
 fragments, Bay Mud deposits

Bottom of boring at 21.5 ft.  
 Boring backfilled with bentonite cement  
 grout (11/1/90)

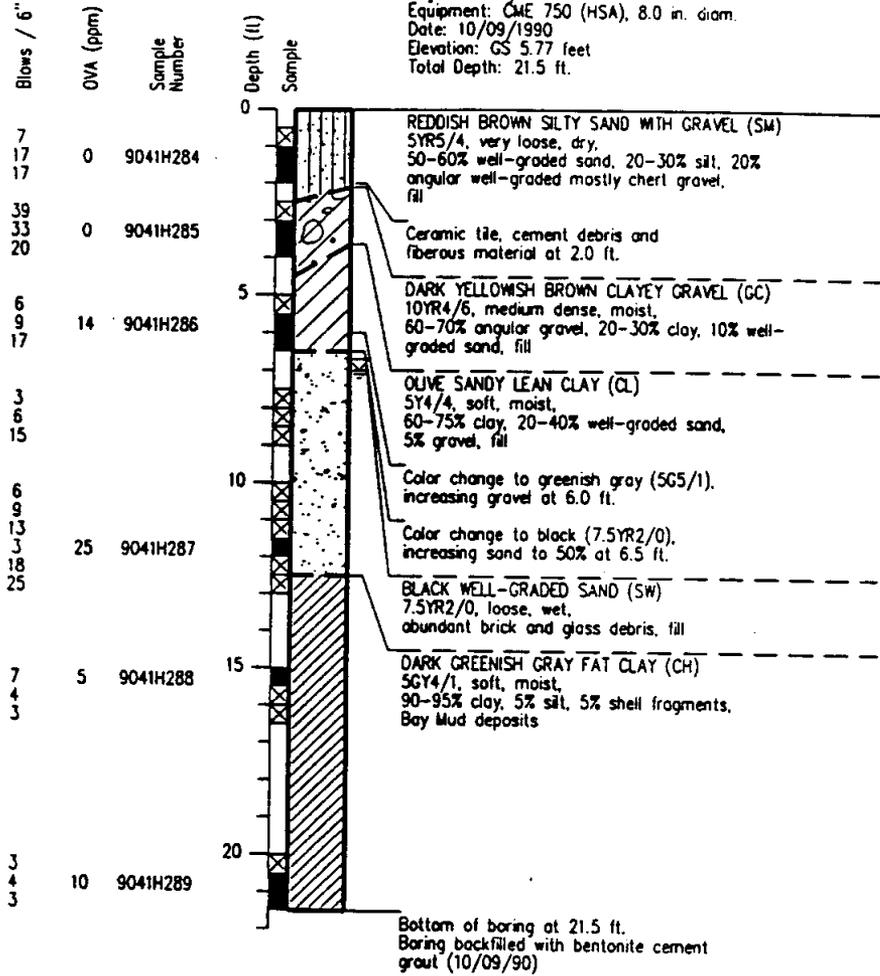


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Log of Boring: IR01B056  
 Primary Phase Remedial Investigation  
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PLATE

Log of Boring: IR01B060  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/09/1990  
 Elevation: GS 5.77 feet  
 Total Depth: 21.5 ft.



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 Primary Phase Remedial Investigation  
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PLATE

DRAWN  
GDT

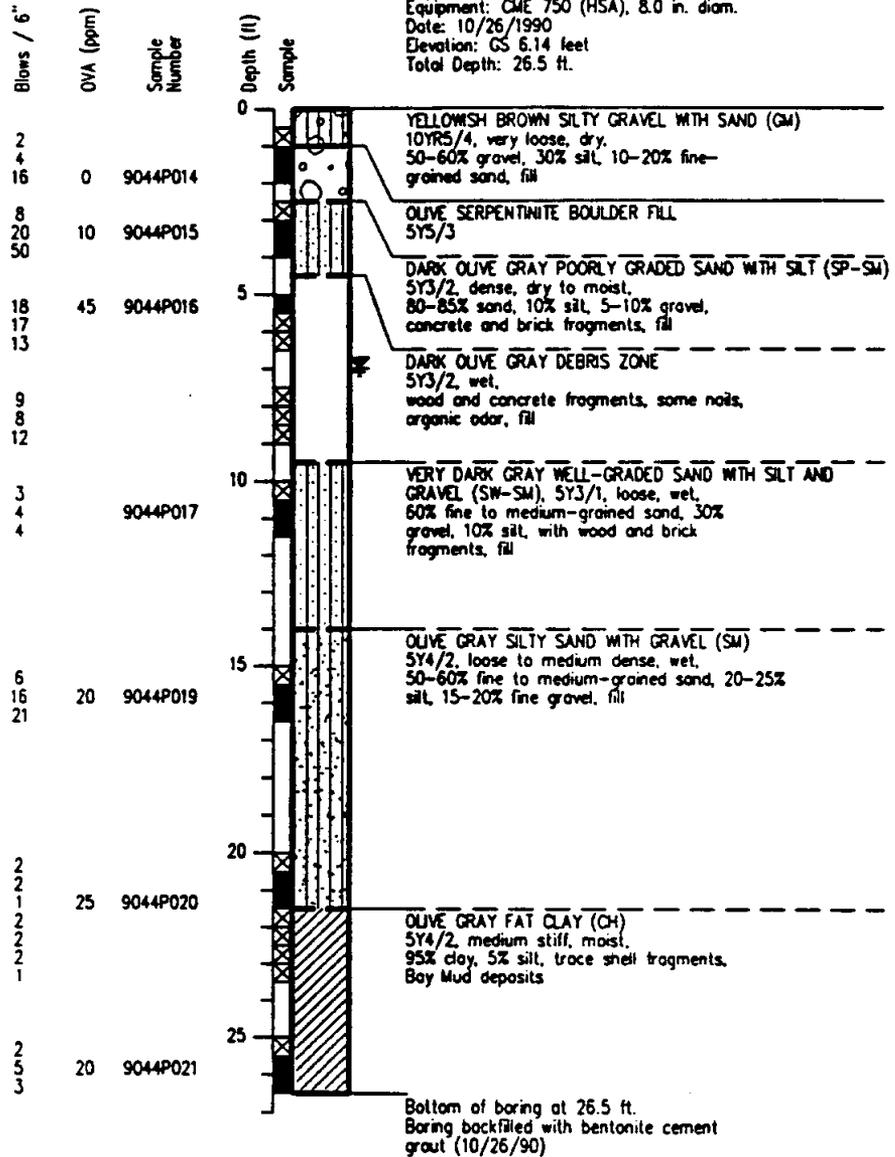
JOB NUMBER  
18639,160.02

APPROVED

DATE  
5/91

REVISED DATE

Log of Boring: IR01B061  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/26/1990  
 Elevation: GS 6.14 feet  
 Total Depth: 26.5 ft.



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Log of Boring: IR01B061  
 Primary Phase Remedial Investigation  
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PLATE

**A15**

DRAWN  
GDT

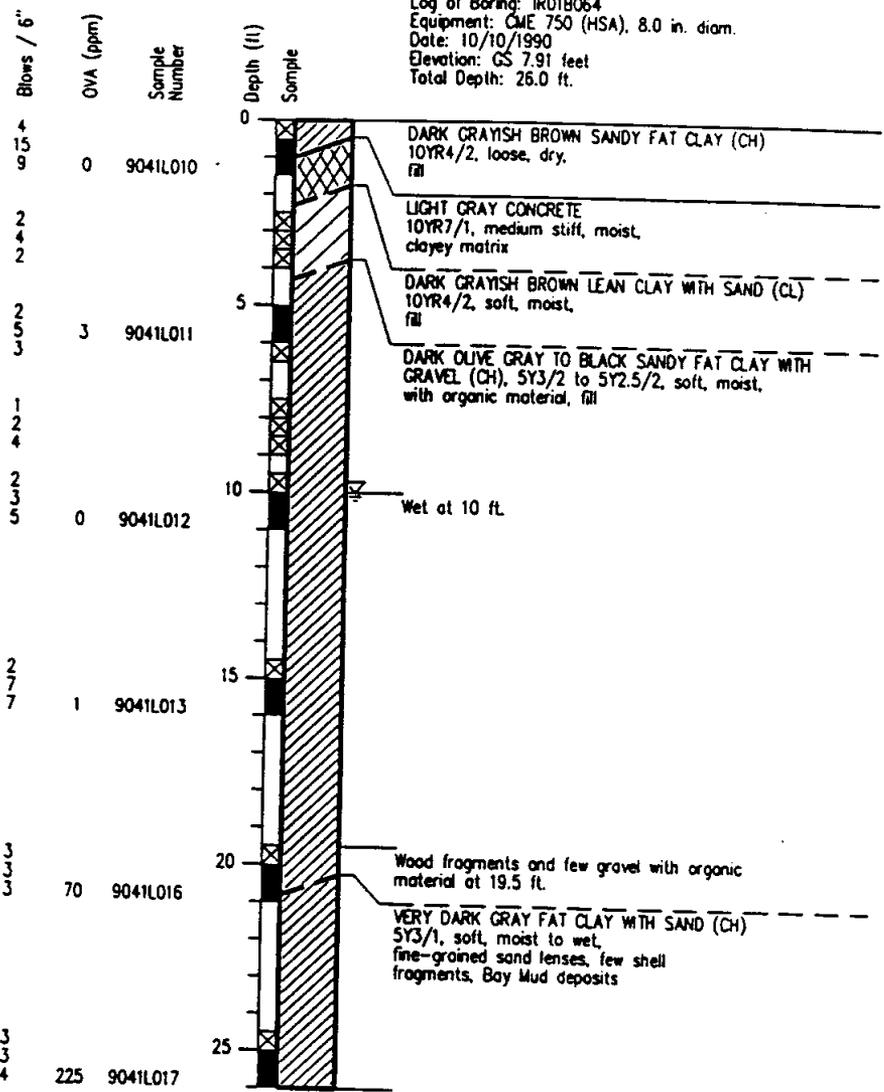
JOB NUMBER  
18639,160.02

APPROVED

DATE  
10/91

REVISED DATE

Log of Boring: IR01B064  
 Equipment: CME 750 (HSA), 8.0 in. diam.  
 Date: 10/10/1990  
 Elevation: GS 7.91 feet  
 Total Depth: 26.0 ft.



Bottom of boring at 26 ft.  
 Boring backfilled with bentonite cement grout (10/10/90)



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 Primary Phase Remedial Investigation  
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PLATE

DRAWN  
 GDT

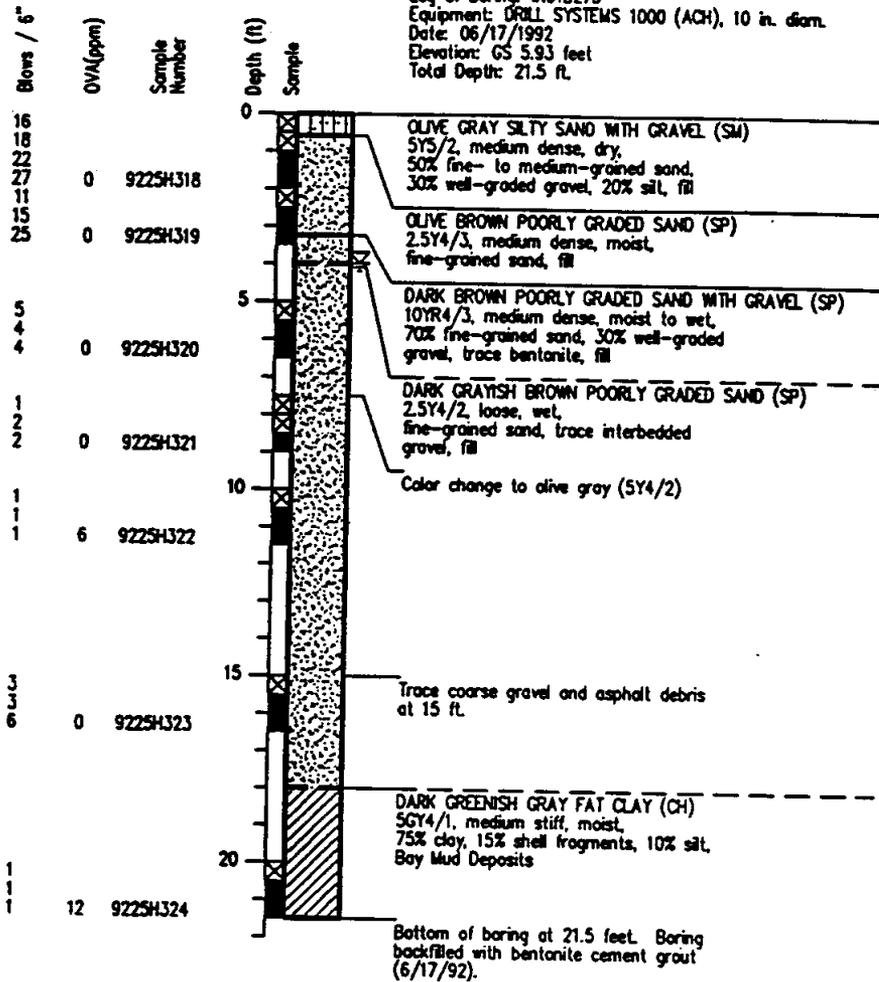
JOB NUMBER  
 18639,160.02

APPROVED

DATE  
 5/91

REVISED DATE

Log of Boring: IR01B273  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/17/1992  
 Elevation: GS 5.93 feet  
 Total Depth: 21.5 ft.



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PLATE

DRAWN  
 W.J.F.

JOB NUMBER

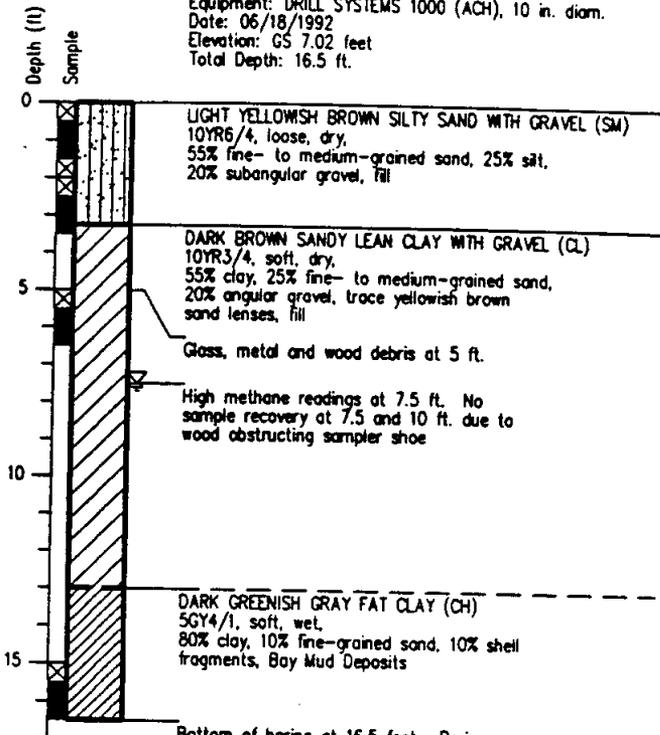
APPROVED

DATE  
 10/92

REVISED DATE

Log of Boring: IR01B274  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/18/1992  
 Elevation: GS 7.02 feet  
 Total Depth: 16.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
18	0	9225A315
23		
18		
7		
11		
14		
11	0	9225A316
16		
33		
56	65	9225A317
9		
3		
4	0	9225A319



Bottom of boring at 16.5 feet. Boring backfilled with bentonite cement grout (6/18/92). Grab water sample 9225A318 collected.



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**Log of Boring IR01B274**

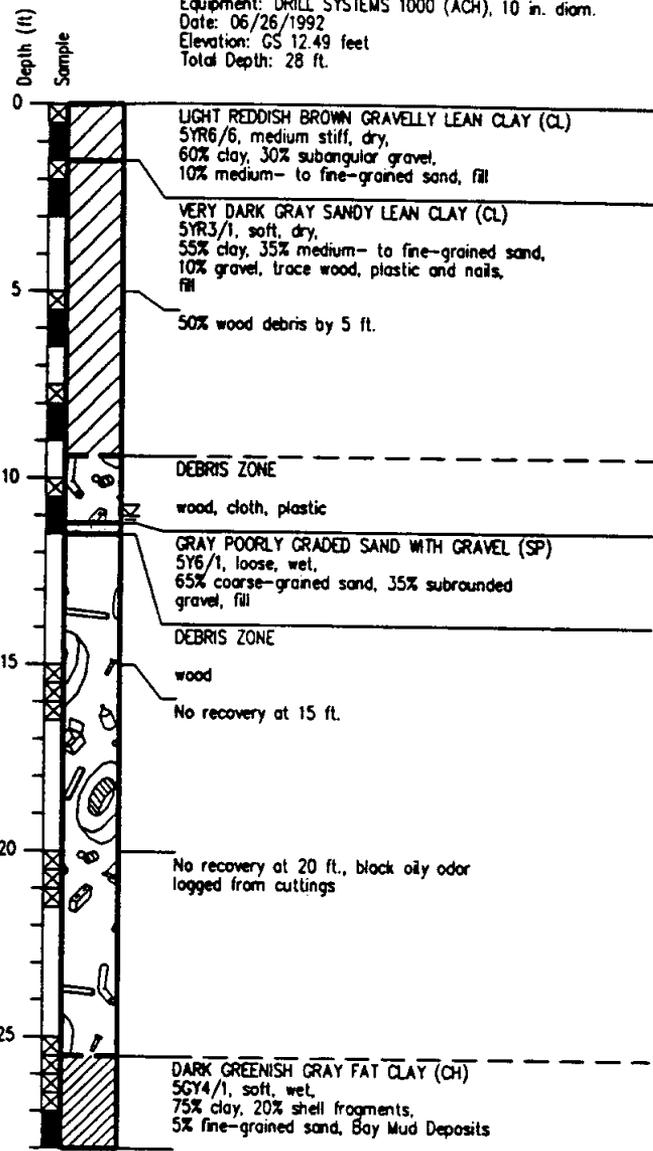
Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
WJF			10/92	

Log of Boring: IR01B275  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/26/1992  
 Elevation: GS 12.49 feet  
 Total Depth: 28 ft.

Blows / 6"	OVA(ppm)	Sample Number
10 18 18 6 17 21		9226A322
10 15 25		9226A373
6 17 20		9226A374
10 15 25		9226A375
21 19 23		9226A376
13 11 11		
17 23 19		
23 4 5 6 2 2		9226A378



Bottom of boring at 28 feet. Boring backfilled with bentonite cement grout (6/26/92). Grab water sample 9226A377 collected.



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Log of Boring IR01B275

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PLATE

DRAWN  
WJF

JOB NUMBER

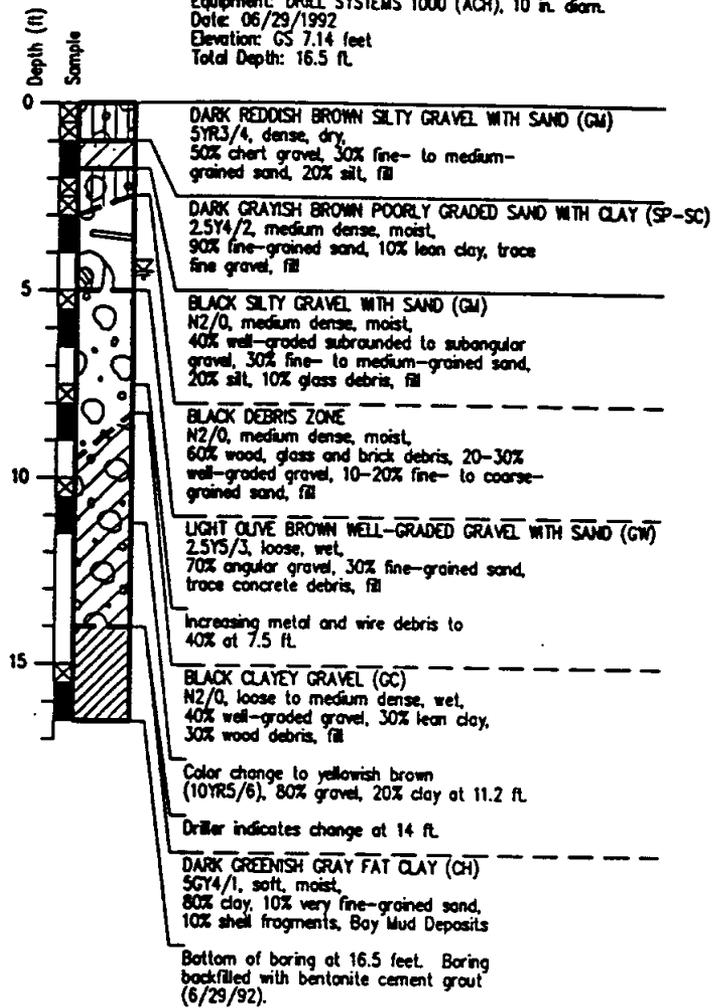
APPROVED

DATE  
10/92

REVISED DATE

Log of Boring: IR018364  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/29/1992  
 Elevation: GS 7.14 feet  
 Total Depth: 16.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
27		
34		
21		
22	1	9227H345
7		
15		
15		
9	10	9227H346
6		
11		
24	0	9227H347
11		
23		
7	30	9227H348
6		
18		
17	0	9227H349
5		
4		
4	30	9227H350



Log of Boring IR018364

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DRAWN  
 W.J.F.

JOB NUMBER

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DATE  
 10/92

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Log of Boring: IR01B365  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/29/1992  
 Elevation: GS 7.22 feet  
 Total Depth: 21.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
49 38	0	9227H351
42 32 43	0	9227H352
4 3	0	9227H353
40	0	9227H353
33 12	0	9227H354
6	0	9227H354
5 4	0	9227H355
2	0	9227H355
3 2	0	9227H356
2	0	9227H356
1 1 3	10	9227H357



DARK REDDISH BROWN SILTY GRAVEL WITH SAND (GM)  
 5YR3/4, dense, dry,  
 50% chert gravel, 30% fine- to medium-  
 grained sand, 20% silt, fill

DARK GRAYISH BROWN POORLY GRADED SAND WITH CLAY (SP-SC)  
 2.5Y4/2, medium dense, dry,  
 90% fine- to medium-grained sand,  
 10% lean clay, fill

VERY DARK GRAYISH BROWN GRAVELLY LEAN CLAY WITH SAND (CL)  
 2.5Y3/2, stiff, dry,  
 50% clay, 30% well-graded gravel,  
 20% fine- to medium-grained sand, fill

OLIVE BROWN SANDY LEAN CLAY WITH GRAVEL (CL)  
 2.5Y4/3,  
 50% clay, 30% fine- to medium-grained sand,  
 20% gravel, fill

OLIVE BROWN POORLY GRADED SAND (SP)  
 2.5Y4/3, loose, moist,  
 90-95% fine-grained sand, 5-10% gravel, fill

OLIVE GRAY POORLY GRADED SAND WITH GRAVEL (SP)  
 5Y4/2, loose, wet,  
 70% sand, 30% well-graded gravel and  
 concrete debris, fill

Increasing gravel, brick and concrete  
 debris to 30-40% at 7.5 ft.

OLIVE GRAY POORLY GRADED SAND (SP)  
 5Y4/2, loose, wet,  
 95-100% fine-grained sand, trace fine  
 gravel, Undifferentiated Upper Sand Deposits

Trace shell fragments at 15 ft.

Driller indicates change at 18 ft.

DARK GREENISH GRAY FAT CLAY (CH)  
 5GY4/1, medium stiff to soft, moist,  
 75% clay, 15% shell fragments,  
 10% fine-grained sand, Bay Mud Deposits

Bottom of boring at 21.5 feet. Boring  
 backfilled with bentonite cement grout  
 (6/29/92).



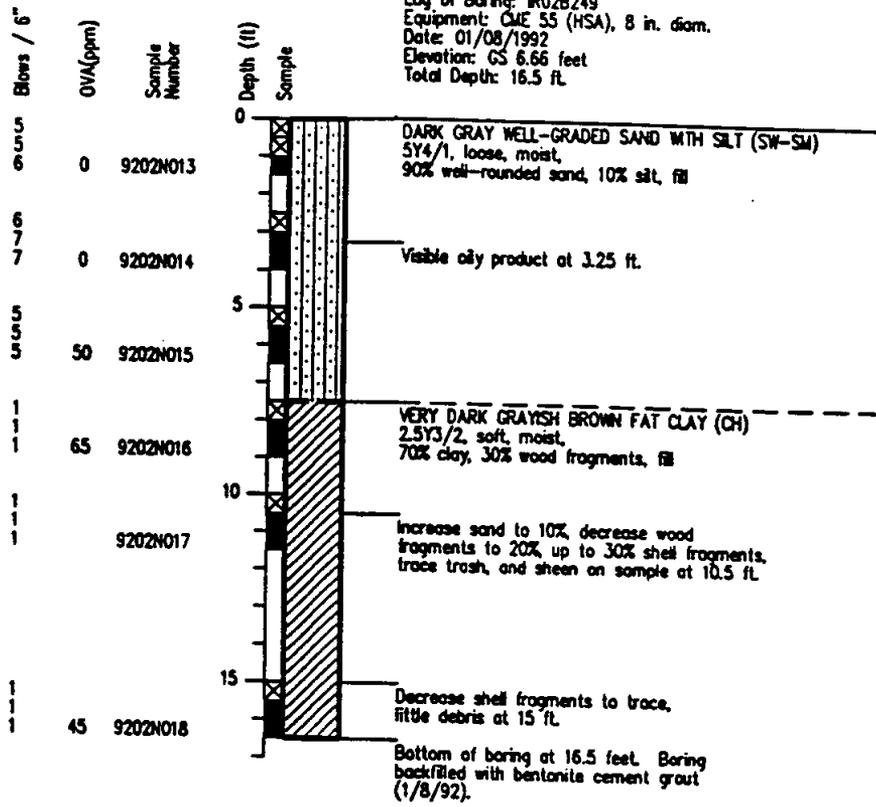
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Log of Boring IR01B365  
 Naval Station, Treasure Island  
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 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
W.J.F.			10/92	

Log of Boring: IR02B249  
 Equipment: CME 55 (HSA), 8 in. diam.  
 Date: 01/08/1992  
 Elevation: GS 6.66 feet  
 Total Depth: 16.5 ft



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Log of Boring IR02B249

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

PLATE

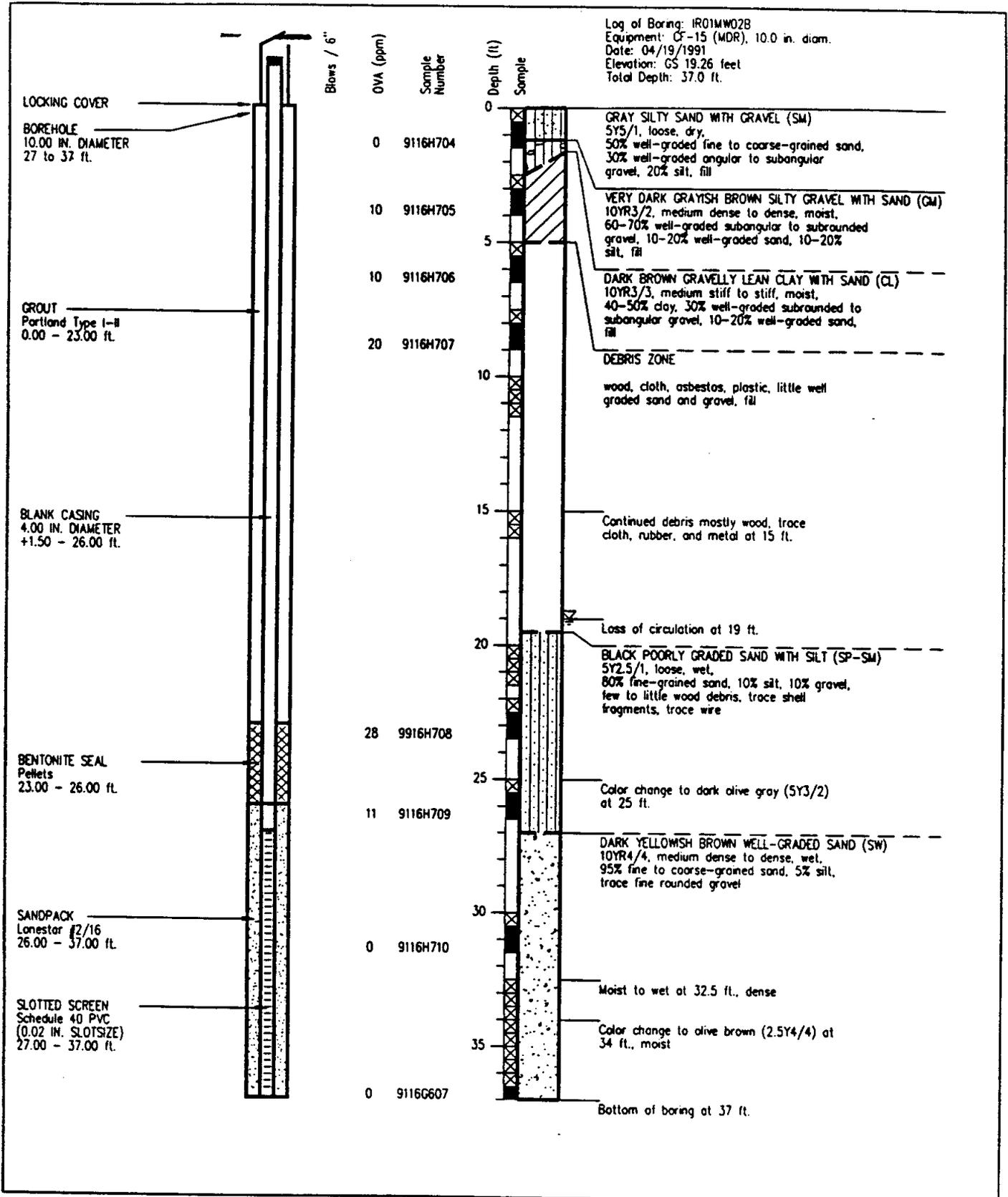
DRAWN  
MF

JOB NUMBER

APPROVED

DATE  
11/09/92

REVISED DATE



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Log of Boring and Well Completion Detail: IR01MW02B  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
 CMM

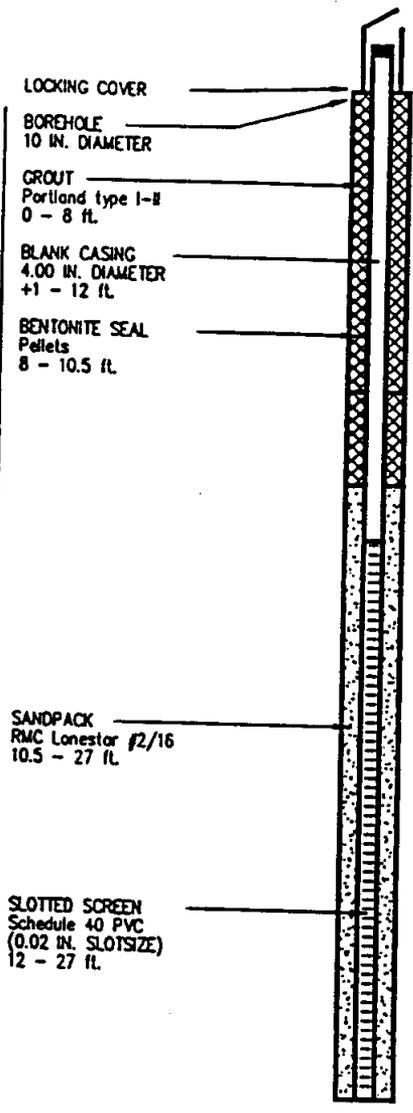
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 18639.110.02

APPROVED

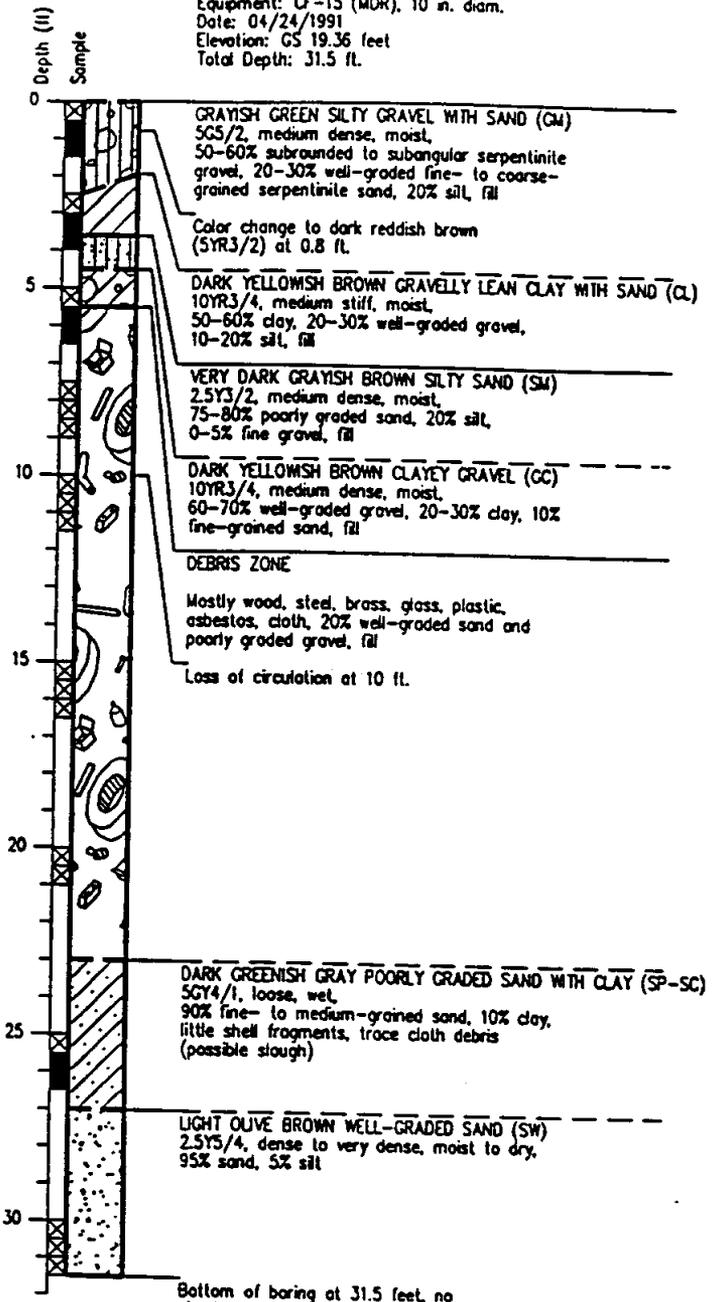
DATE  
 4/92

REVISED DATE

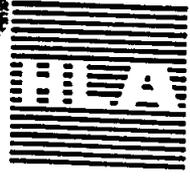
Log of Boring: IR01MW03A  
 Equipment: CF-15 (MOR), 10 in. diam.  
 Date: 04/24/1991  
 Elevation: GS 19.36 feet  
 Total Depth: 31.5 ft.



Blows / 6"	ovd(ppm)	Sample Number
	0	9117H723
	10	9117H724
	75	9117H725
	70	9117H726



Bottom of boring at 31.5 feet, no circulation from 10 feet, to total depth. Boring backfilled from 31.5 to 27 feet with bentonite chips.



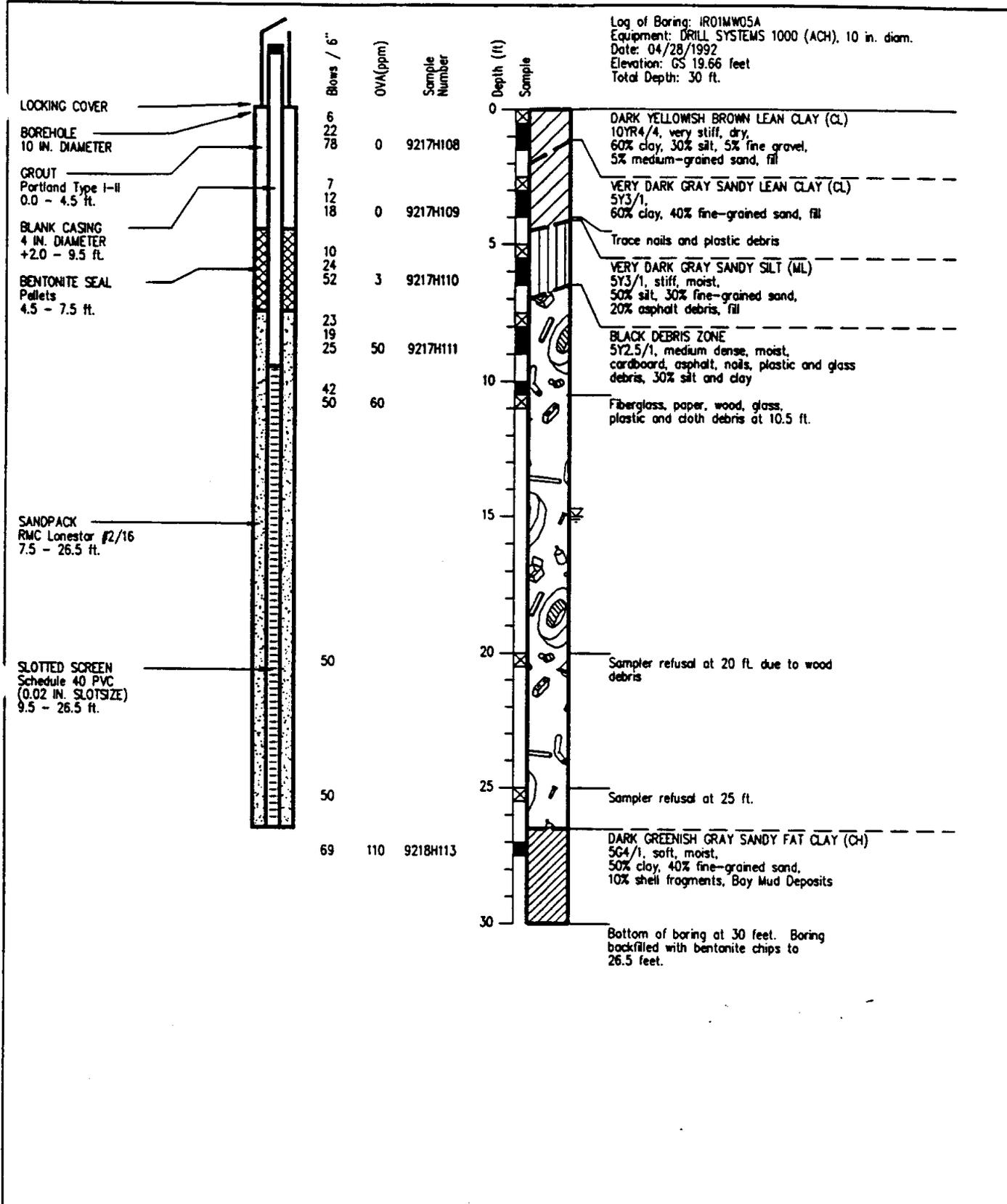
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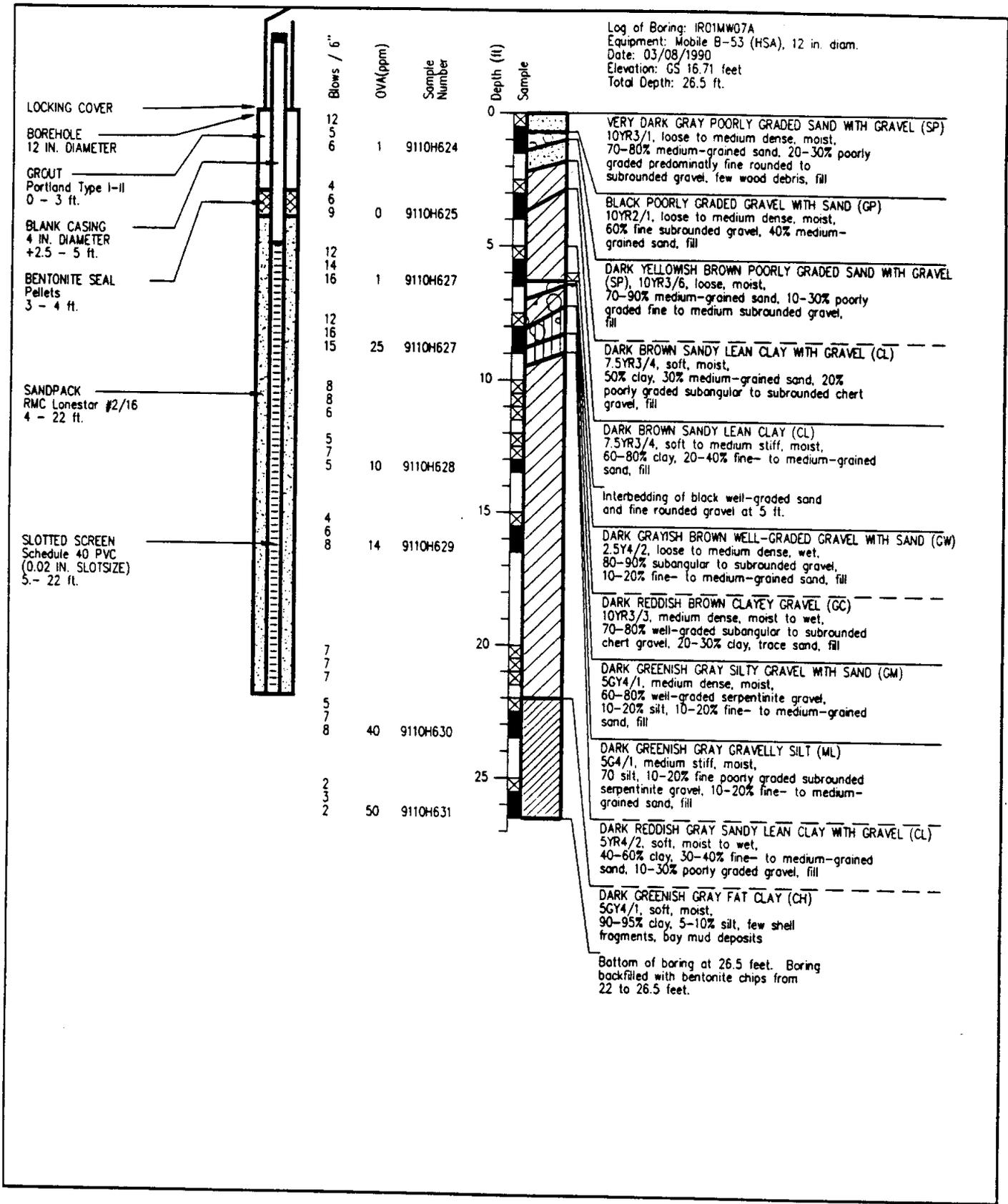
Log of Boring IR01MW03A with Well Completion Detail  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISION DATE
			1/7/93	

Log of Boring: IR01MW05A  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 04/28/1992  
 Elevation: GS 19.66 feet  
 Total Depth: 30 ft.





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Log of Boring IR01MW07A with Well Completion Detail

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PLATE

DRAWN

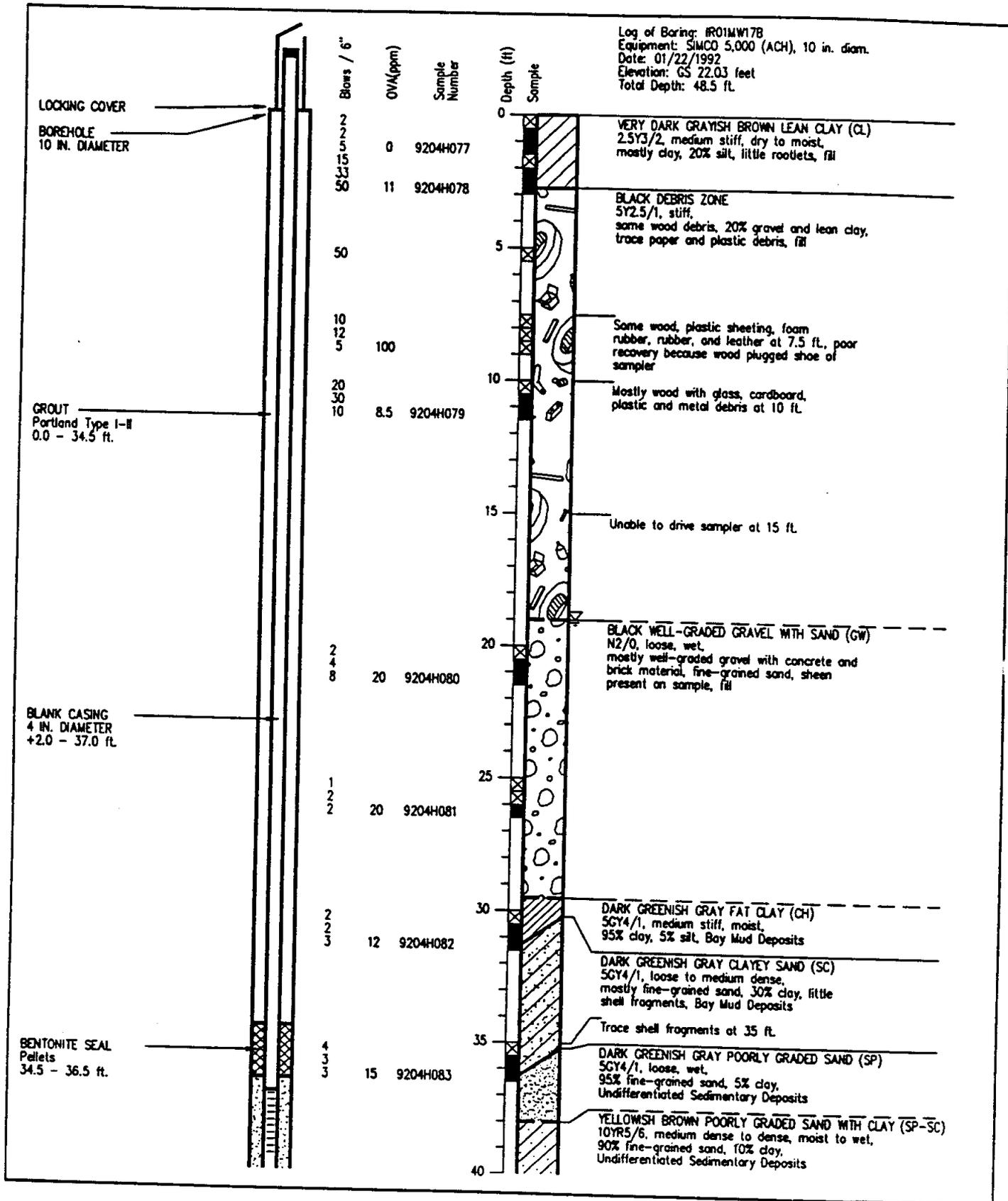
JOB NUMBER

APPROVED

DATE  
11/93

REVISED DATE





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Log of Boring IR01MW17B with Well Completion Detail

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PLATE

DRAWN  
MF

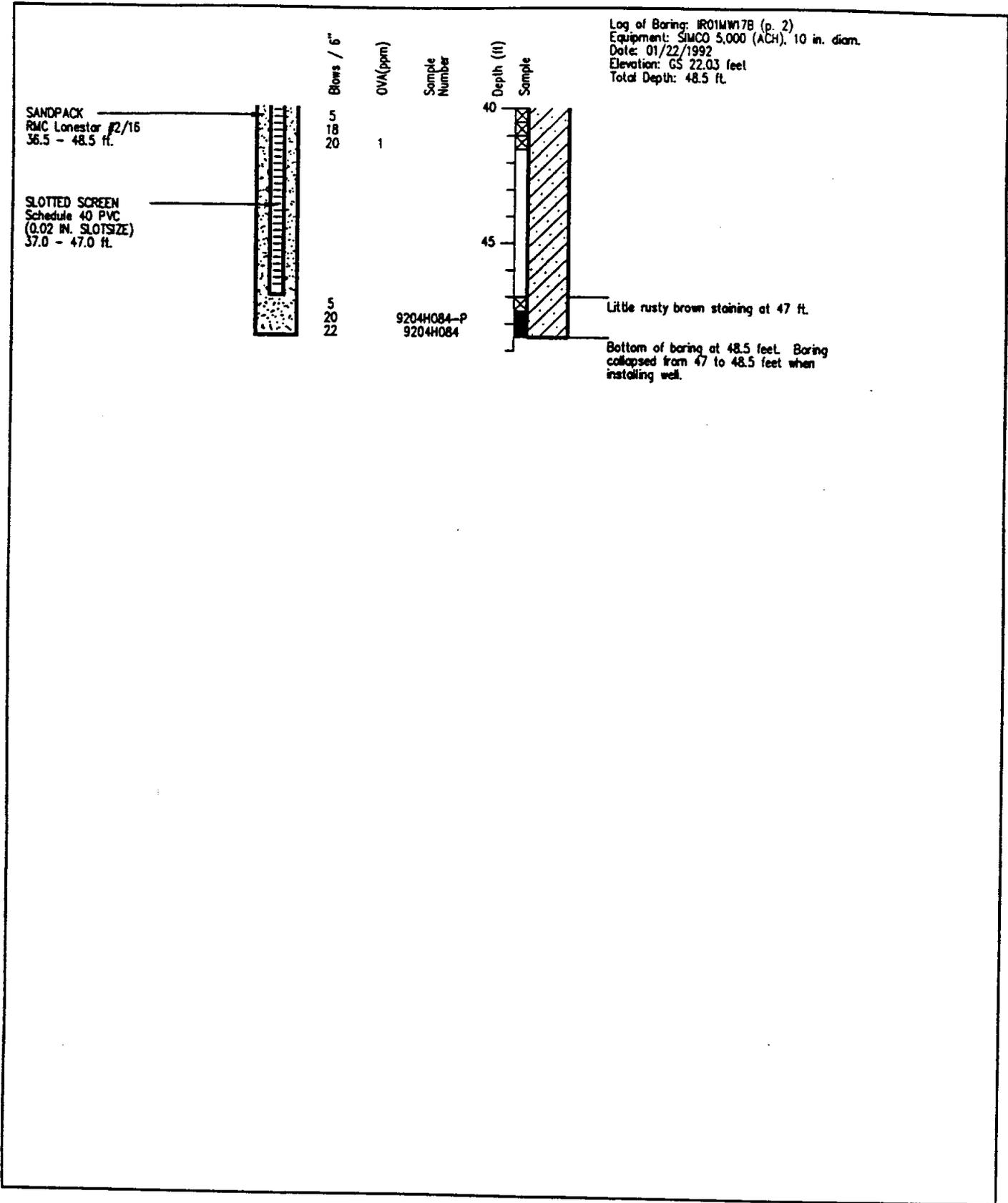
JOB NUMBER

APPROVED

DATE

REVISED DATE

11/30/92



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Log of Boring IR01MW17B with Well Completion Detail

Naval Station, Treasure Island  
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PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/30/92	

Log of Boring: IR01MW18A  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 04/30/1992  
 Elevation: GS 18.00 feet  
 Total Depth: 31.5 ft.

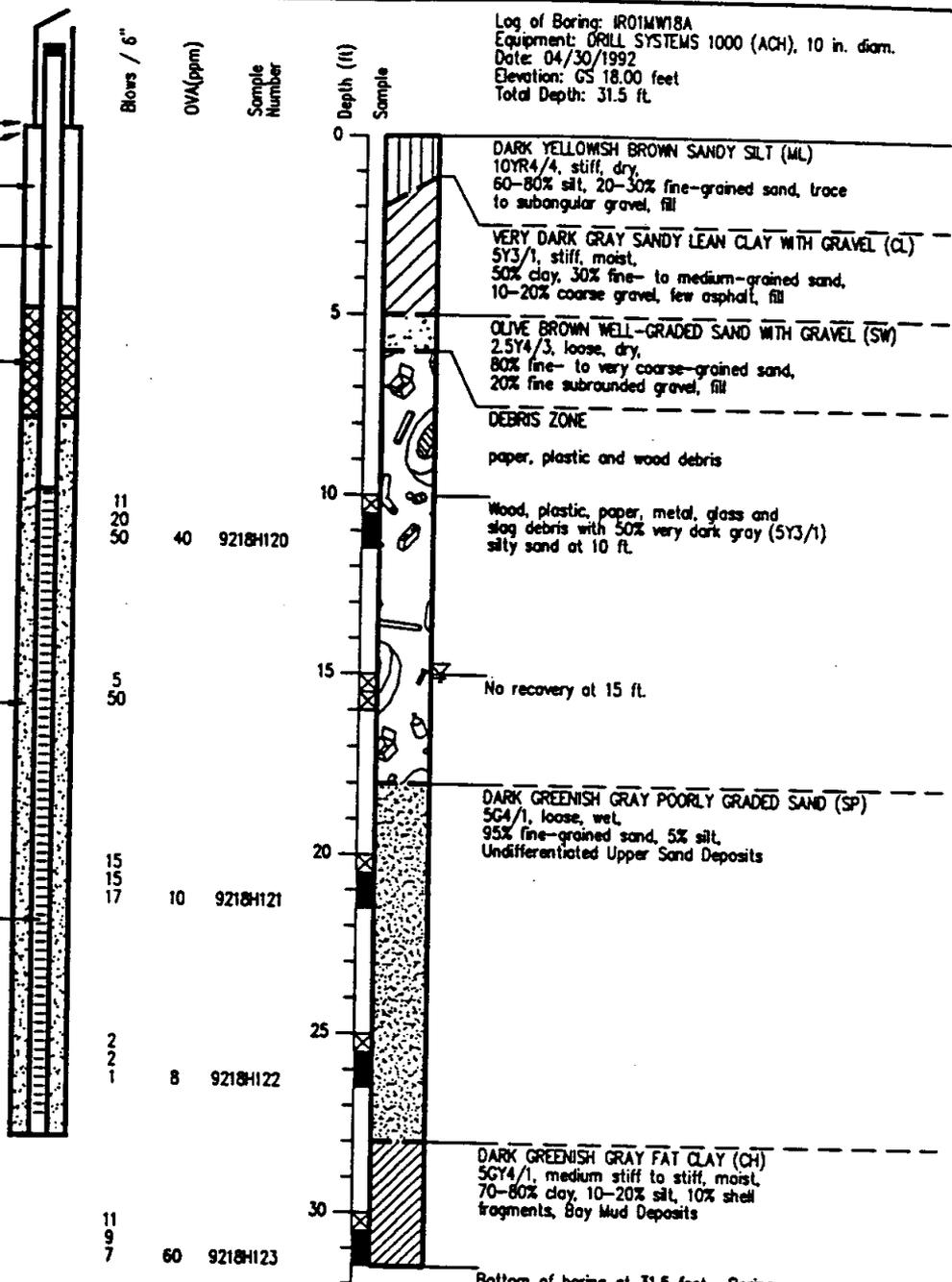
LOCKING COVER  
 BOREHOLE  
 10 IN. DIAMETER  
 GROUT  
 Portland Type I-II  
 0.0 - 5.0 ft.  
 BLANK CASING  
 4 IN. DIAMETER  
 +2.0 - 10.0 ft.  
 BENTONITE SEAL  
 Pellets  
 5.0 - 8.0 ft.

SANDPACK  
 RMC Lonestar #2/16  
 8.0 - 28.0 ft.

SLOTTED SCREEN  
 Schedule 40 PVC  
 (0.02 IN. SLOTSIZE)  
 10.0 - 28.0 ft.

Blows / 6"  
 OVA(ppm)  
 Sample Number

Depth (ft)  
 Sample

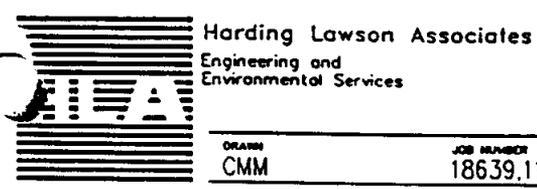
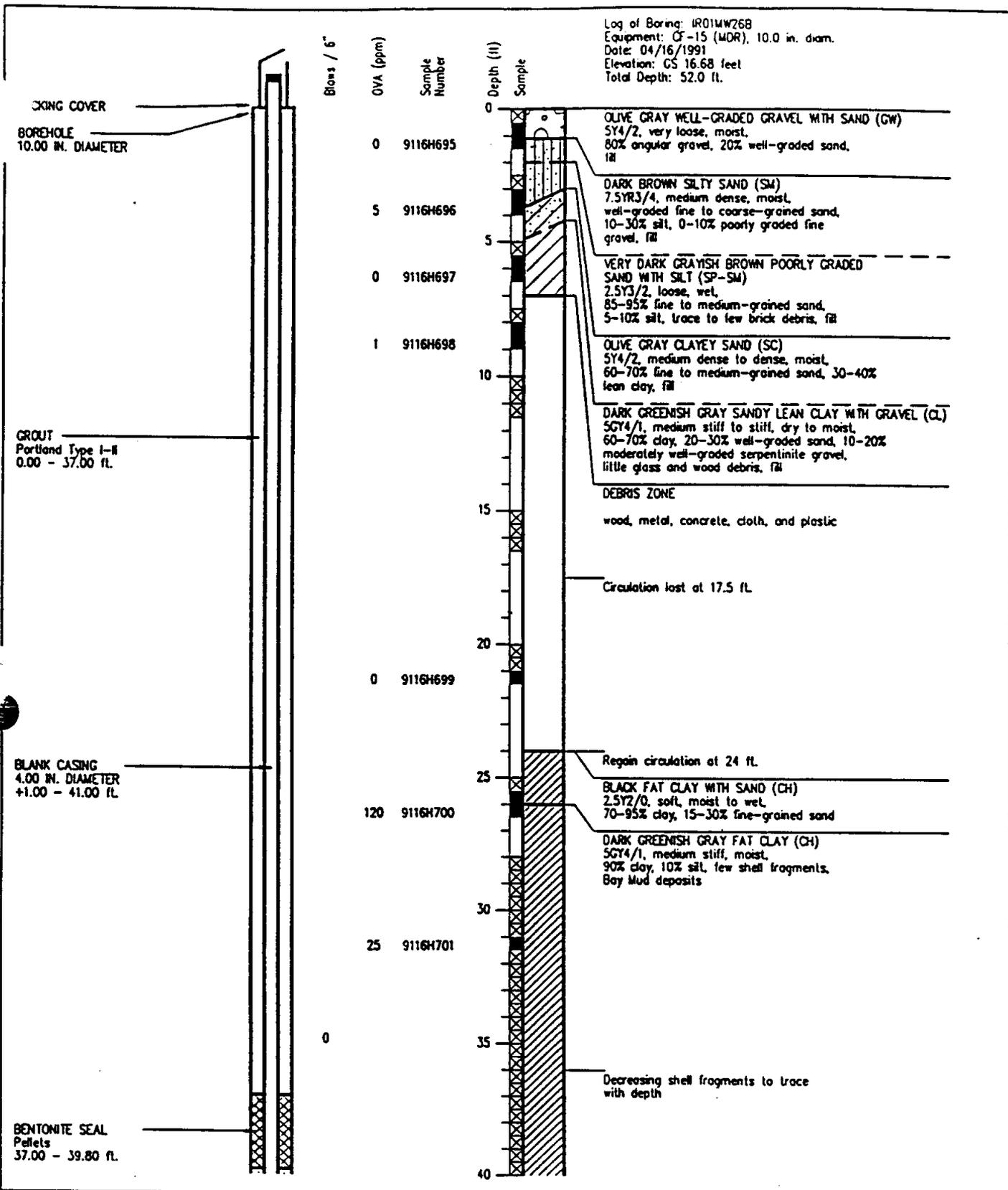


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Log of Boring IR01MW18A with Well Completion Detail  
 Naval Station, Treasure Island  
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PLATE

DRAWN: W.J.F.      JOB NUMBER:      APPROVED:      DATE: 10/92      REVISED DATE:



Log of Boring and Well Completion Detail: IR01MW268  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

Log of Boring: IR01MW26B (p. 2)  
 Equipment: CF-15 (MDR), 10.0 in. diam.  
 Date: 04/16/1991  
 Elevation: GS 16.68 feet  
 Total Depth: 52.0 ft.

SANDPACK  
 RMC Lonestar #2/16  
 39.80 - 51.00 ft.

SLOTTED SCREEN  
 Schedule 40 PVC  
 (0.02 IN. SLOTSIZE)  
 41.00 - 51.00 ft.

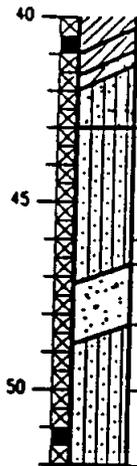


Blows / 6"  
 OVA (ppm)  
 Sample Number

10 9116H702

1 9116H703

Depth (ft)  
 Sample



DARK GREENISH GRAY SANDY FAT CLAY (CH)  
 5GY4/1, soft to medium stiff, moist,  
 60-80% clay, 20-40% poorly graded fine-  
 grained sand

Wet at 41.5 ft.

DARK GREENISH GRAY CLAYEY SAND (SC)  
 5GY4/1, loose, wet,  
 70-80% poorly graded fine-grained sand,  
 20-30% clay

DARK GREENISH GRAY SILTY SAND (SM)  
 5GY4/1, loose, wet,  
 80-90% poorly graded fine-grained sand,  
 10-20% silt

GRAYISH GREEN WELL-GRADED SAND WITH SILT (SW-SM)  
 5G4/2, medium dense to dense, moist to wet,  
 90% well-graded fine to coarse-grained sand,  
 10% silt

Color change to olive (5Y5/6) at 46 ft.

LIGHT OLIVE BROWN WELL-GRADED SAND (SW)  
 2.5Y5/6, loose, wet,  
 90-95% fine to coarse-grained sand, 5-10%  
 silt

OLIVE WELL-GRADED SAND WITH SILT (SW-SM)  
 5Y4/3, dense, moist,  
 90% sand, 10% silt

Color change to olive (5Y5/4) at 50 ft.

Bottom of boring at 52 ft.



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Log of Boring and Well Completion Detail: IR01MW26B  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

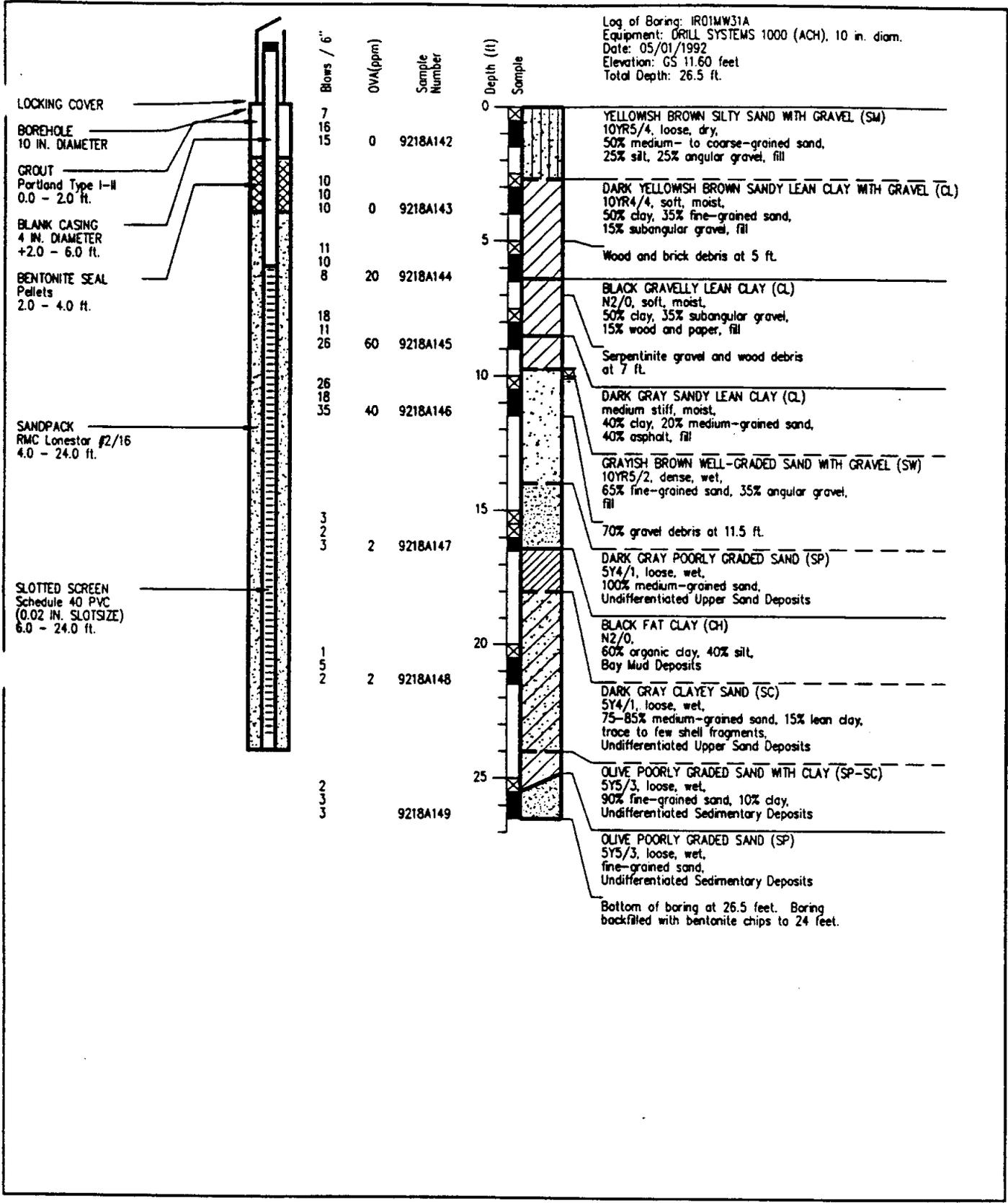
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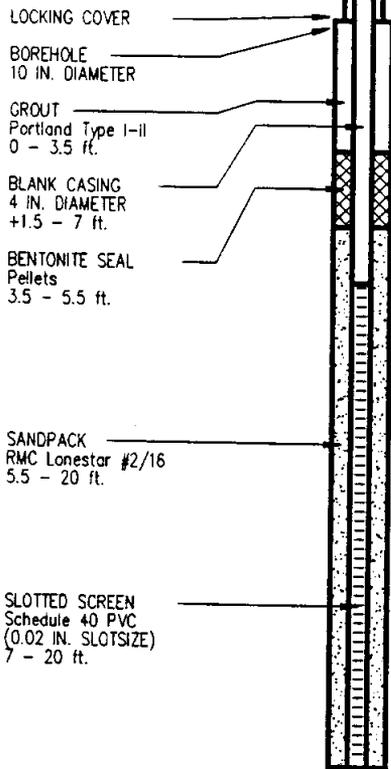
JOB NUMBER  
 18639,110.02

APPROVED

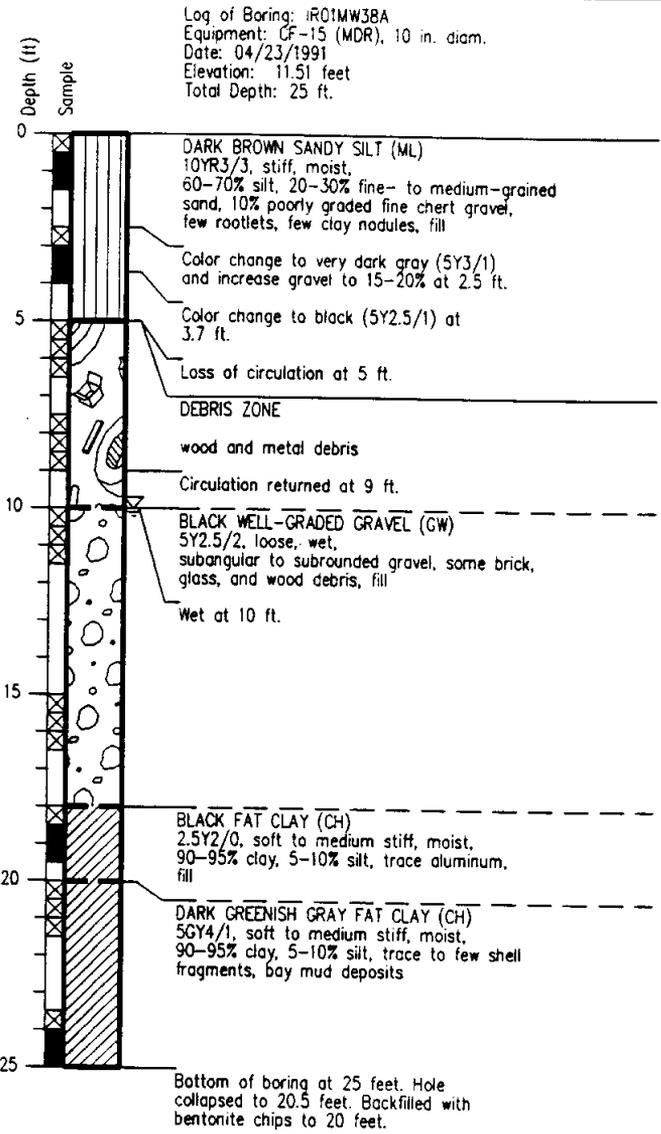
DATE  
 4/92

REVISED DATE





Blows / 6"	OVA(ppm)	Sample Number
0		9117H719
25		9117H720
50		9117H721
120		9117H722



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Log of Boring IR01MW38A with Well Completion Detail  
 Naval Station Treasure Island  
 Hunters Point Annex  
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PLATE

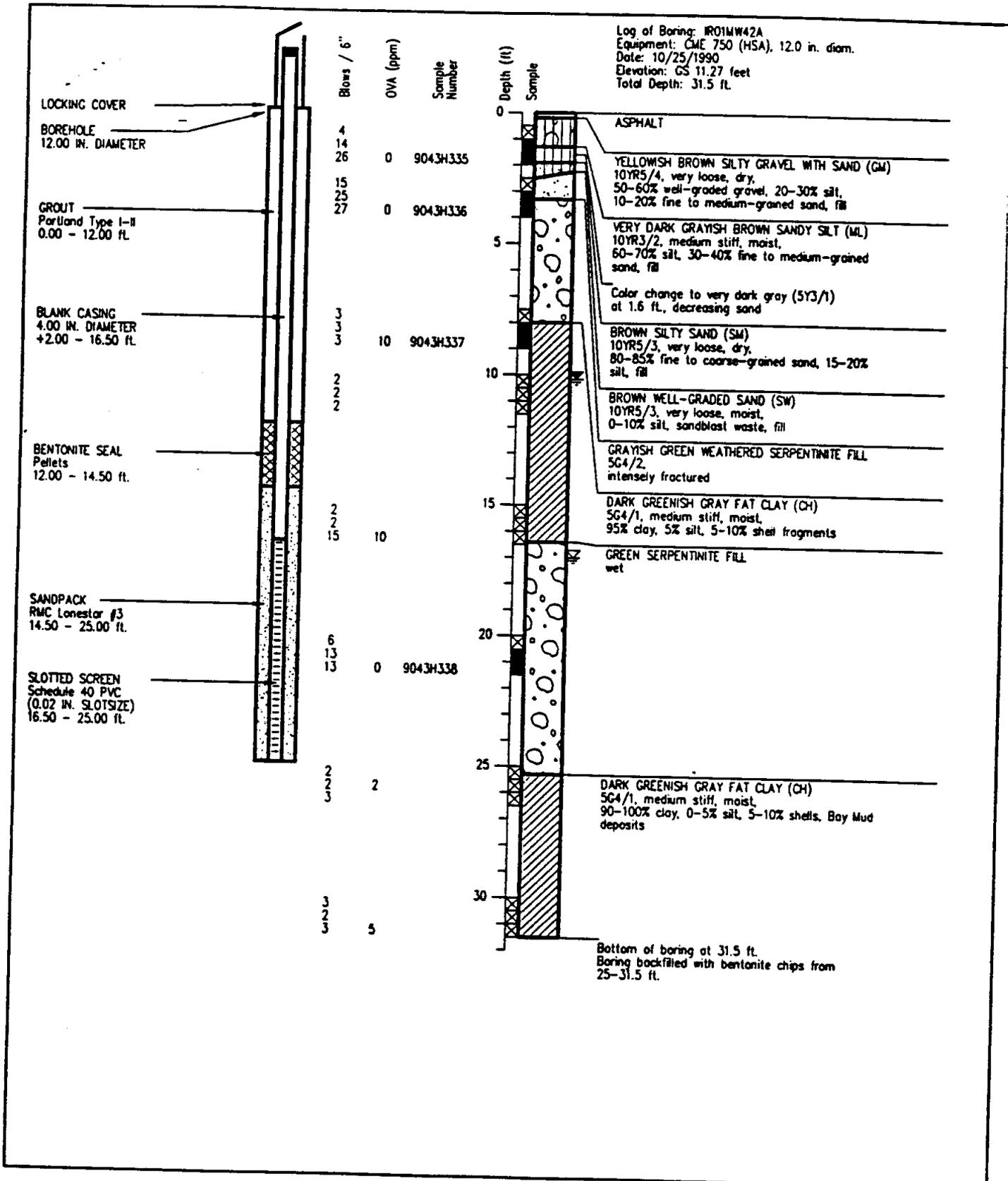
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JOB NUMBER

APPROVED

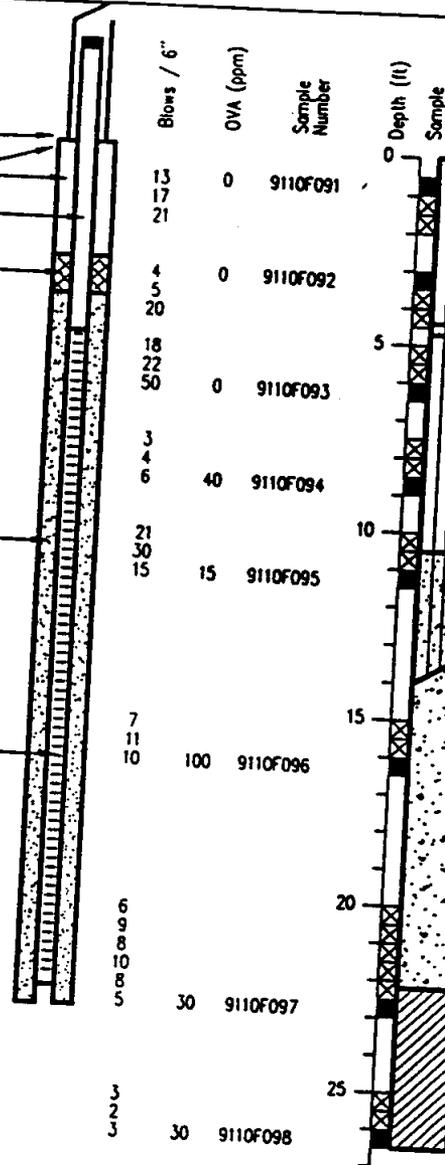
DATE  
 1/94

REVISED DATE



Log of Boring: IR01MW43A  
 Equipment: MOBILE B-53 (HSA), 12.0 in. diam.  
 Date: 03/06/1991  
 Elevation: GS 10.17 feet  
 Total Depth: 26.5 ft.

- LOCKING COVER
- BOREHOLE  
12.00 IN. DIAMETER
- GROUT  
Portland Type I-II  
0.00 - 3.00 ft.
- BLANK CASING  
4.00 IN. DIAMETER  
+2.00 - 5.00 ft.
- BENTONITE SEAL  
Pellets  
3.00 - 4.00 ft.
- SANDPACK  
RMC Lanester #2/16  
4.00 - 23.00 ft.
- SLOTTED SCREEN  
Schedule 40 PVC  
(0.02 IN. SLOTSIZE)  
5.00 - 22.50 ft.



VERY DARK GRAYISH BROWN SILT WITH GRAVEL (ML)  
 2.5Y3/2, medium stiff to stiff, moist,  
 80% silt, 15% fine angular gravel, 5% fine-grained sand, wood debris, fill

Pieces of asphalt at 3 ft--

DARK BROWN POORLY GRADED SAND WITH SILT (SP-SM)  
 10YR3/3, loose, moist,  
 90% medium-grained sand, 10% silt, fill

VERY DARK GRAYISH BROWN SANDY SILT (ML)  
 10YR3/2, stiff, moist to wet,  
 70% silt, 20% fine to medium-grained sand,  
 10% fine to medium angular gravel, trace cloth and fibrous material, fill

Color change to black (2.5YN/2) at 8.5 ft., with wire debris

BLACK SILTY SAND (SM)  
 2.5Y2/0, medium dense, wet,  
 85% very fine to fine-grained sand,  
 15% silt, sheen on sampler, fill

VERY DARK GRAYISH BROWN WELL-GRADED SAND (SW)  
 2.5Y3/2, loose, wet,  
 very fine to medium-grained sand, trace silt, possible point chips, wire, fill

DARK OLIVE GRAY FAT CLAY (CH)  
 5Y3/2, soft, moist,  
 97% clay, trace shell fragments, Bay Mud deposits

Bottom of boring at 26.5 ft.  
 Boring backfilled with bentonite chips from 23 to 26.5 ft.



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Log of Boring and Well Completion Detail: IR01MW43A  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

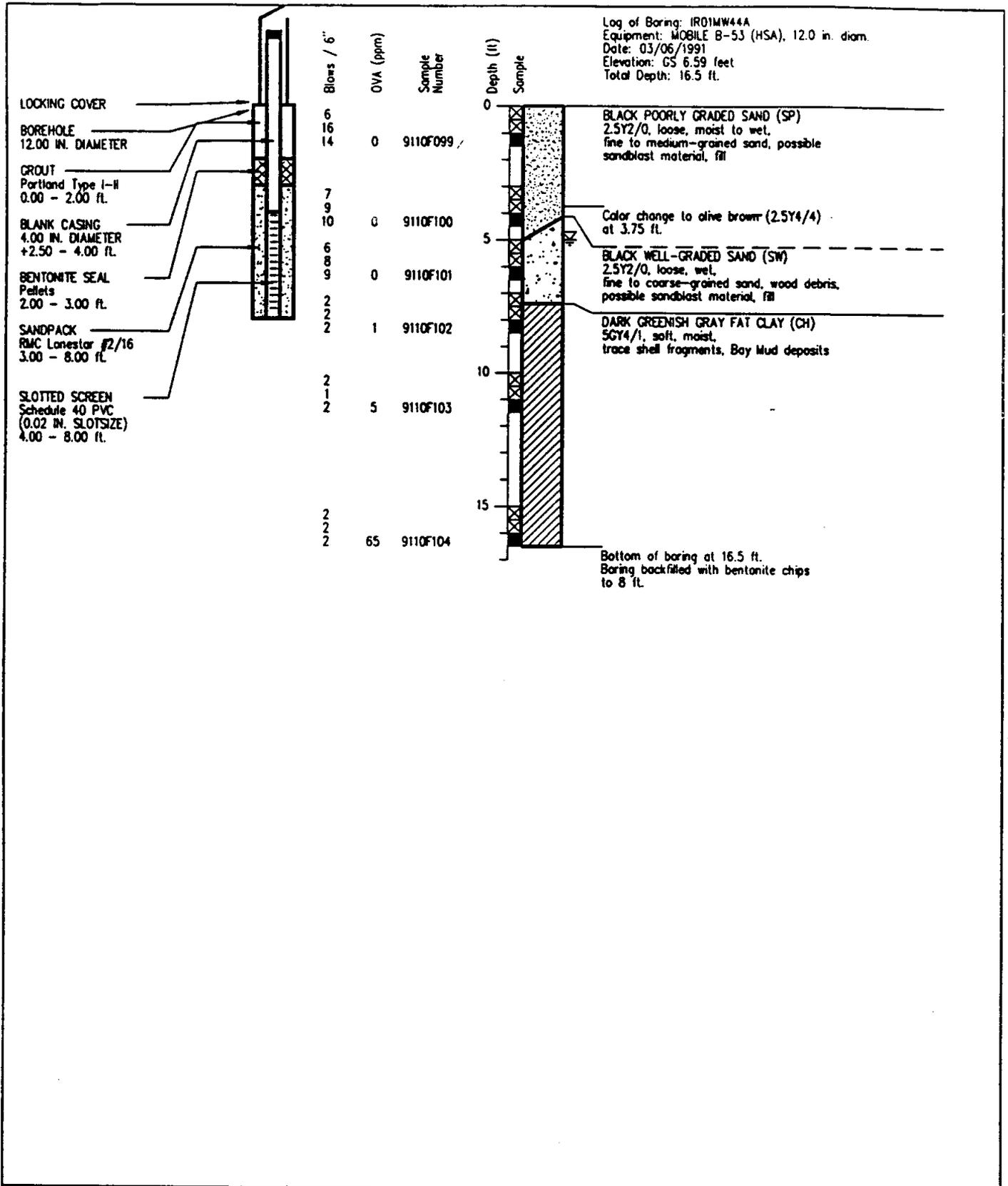
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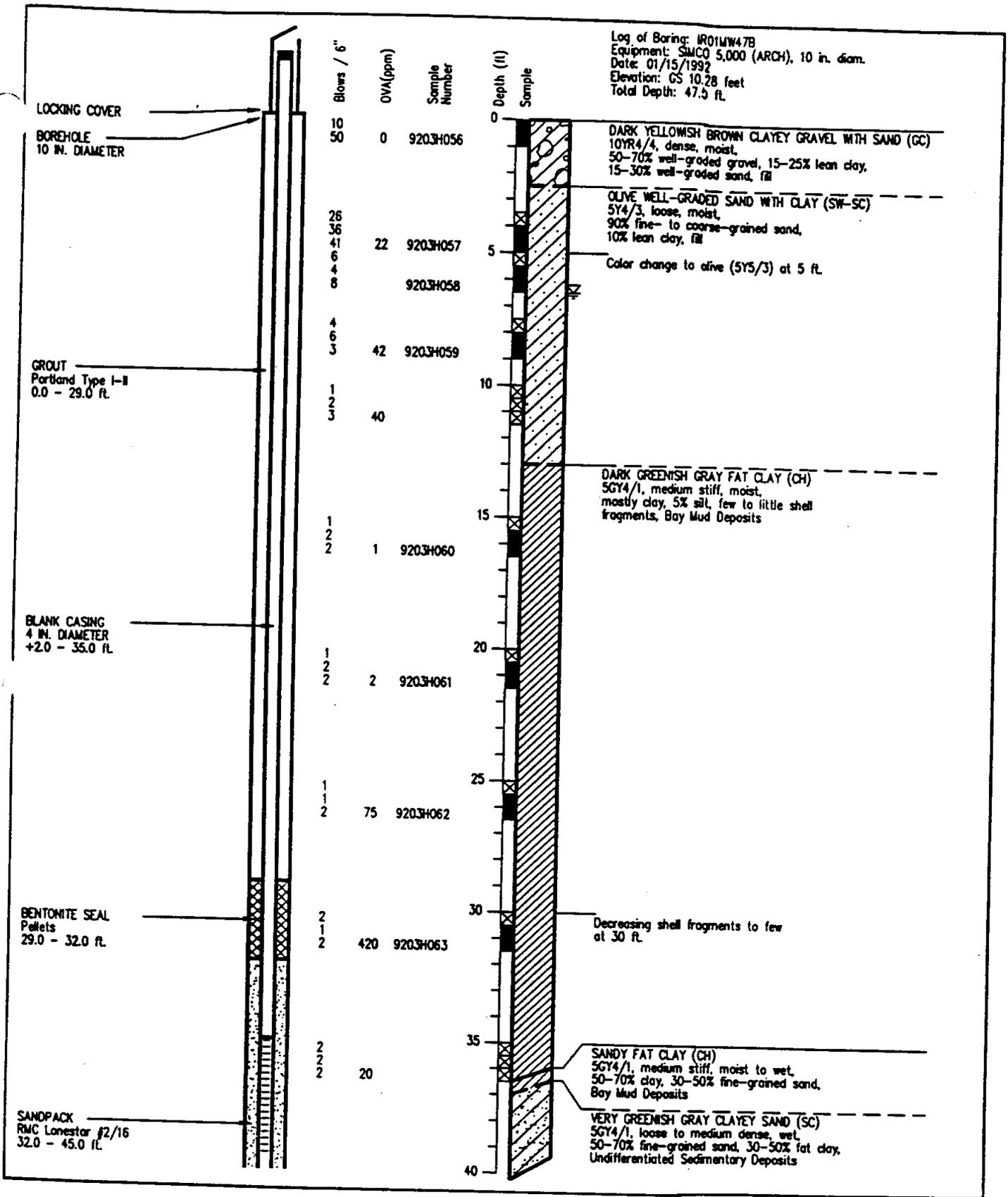
JOB NUMBER  
 18639,160.02

APPROVED

DATE  
 4/92

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Log of Boring IR01MW47B with Well Completion Detail

Naval Station, Treasure Island  
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PLATE

DRAWN  
 W.J.F.

JOB NUMBER

APPROVED

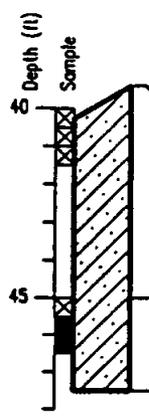
DATE  
 10/92

REVISED DATE

SLOTTED SCREEN  
Schedule 40 PVC  
(0.02 IN. SLOTSIZE)  
35.0 - 45.0 ft.



Blows / 6"	OVA(ppm)	Sample Number
1		
2	350	
1		
2		
2		
2	3	9203H064



Log of Boring: IR01MW47B (p. 2)  
Equipment: SIMCO 5,000 (ARCH), 10 in. diam.  
Date: 01/15/1992  
Elevation: GS 10.28 feet  
Total Depth: 47.5 ft.

DARK GREENISH GRAY POORLY GRADED SAND WITH CLAY (SP-SC)  
SGY4/1, loose, wet,  
90-95% fine-grained sand, 5-10% fat clay,  
Undifferentiated Sedimentary Deposits

Color change to grayish green (SG4/2)  
by 45 ft., medium dense, moist to wet

Bottom of boring at 47.5 feet. Boring  
collapsed to 45 ft. when installing well.



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Log of Boring IR01MW47B with Well Completion Detail

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PLATE

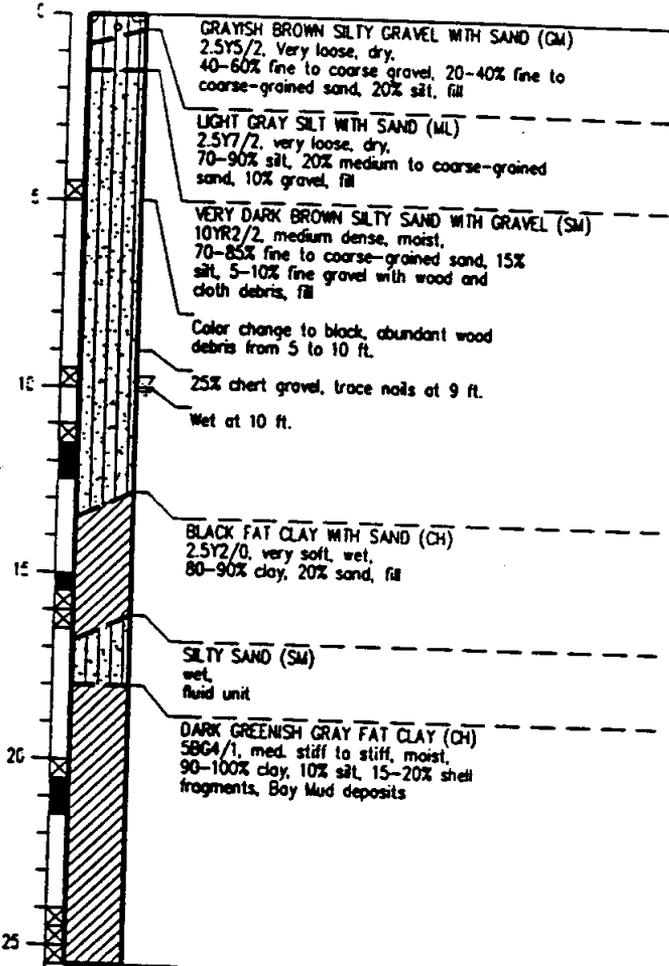
DRAWN	JOB NUMBER	APPROVED	DATE	REVIEW DATE
W.J.F.			10/92	

LOCKING COVER  
 BOREHOLE  
 12.00 IN. DIAMETER  
 GROUT  
 Portland Type I-II  
 0.00 - 3.00 ft.  
 BLANK CASING  
 4.00 IN. DIAMETER  
 +1.50 - 5.00 ft.  
 BENTONITE SEAL  
 Pellets  
 3.00 - 4.50 ft.  
 SANDPACK  
 RMC Lonestar #2/15  
 4.50 - 18.00 ft.  
 SLOTTED SCREEN  
 Schedule 40 PVC  
 (0.02 IN. SLOTSIZE)  
 5.00 - 18.00 ft.



Blows / 6"	OVA (ppm)	Sample Number
2		
2		
3		9043H332
1		9043H333
2		
3		
1		
1		5 9043H334
1		
1		
1		7

Log of Boring: IR01MW48A  
 Equipment: CME 750 (HSA), 12.0 in. diam.  
 Date: 10/24/1990  
 Elevation: GS 9.03 feet  
 Total Depth: 25.5 ft.



Bottom of boring at 25.5 ft.  
 Boring backfilled with bentonite chips from 18 to 25.5 ft.



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Log of Boring and Well Completion Detail: IR01MW48A  
 Primary Phase Remedial Investigation  
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DRAWN  
 GDT

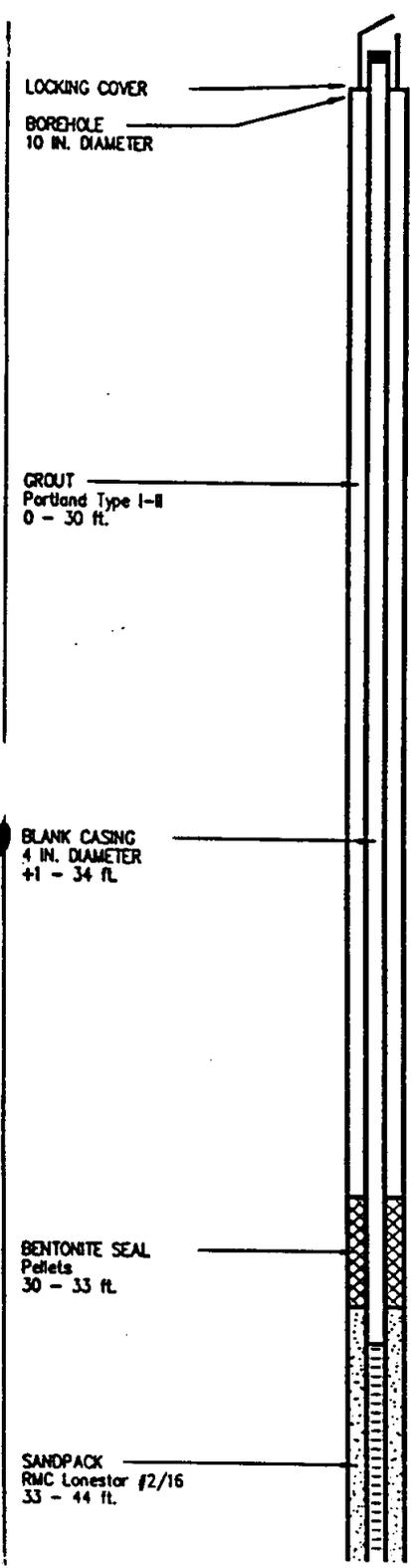
JOB NUMBER  
 18639.60.02

APPROVE:

DATE  
 10/91

REVISED DATE

Log of Boring: IR01MWS3B  
 Equipment: CF-15 (MDR), 10 in. diam.  
 Date: 04/11/1991  
 Elevation: GS 8.80 feet  
 Total Depth: 44 ft.



Blows / 6"	OVA(ppm)	Sample Number	Depth (ft)	Sample
	0	9115M001	0	DARK GRAYISH BROWN POORLY GRADED SAND WITH SILT (SP-SM) 10YR4/2, very loose, dry, 80-90% sand, 5-15% silt, 5% subangular to subrounded gravel, fill
		9115M002	0	VERY DARK GRAY POORLY GRADED SAND (SP) 10YR3/1, loose to medium dense, wet, 90% sand, 5% silt, 5% gravel, fill
	18	9115M003	5	VERY DARK GRAY POORLY GRADED GRAVEL WITH SAND (GP) 10YR3/3, medium dense, wet, 60% gravel, 30% sand, 10% wood debris, trace brick, fill
	55	9115M004	55	VERY DARK GRAY POORLY GRADED GRAVEL (GP) 10YR3/3, medium dense, wet, 85-90% gravel, 10-15% sand, trace wood and brick debris, fill
			10	DEBRIS ZONE concrete, wood, and metal debris
	75	9115M005	75	DARK GRAY POORLY GRADED GRAVEL (GP) 10YR3/1, medium dense, wet, 90% fine angular gravel, 10% sand, some brick, trace possible asbestos, fill
			15	BLACK FAT CLAY WITH SAND (CH) 2.5Y2/0, very soft, wet, 80-90% clay, 10-20% sand
		9115M006	20	DARK OLIVE GRAY FAT CLAY (CH) 5Y3/2, medium stiff, wet, 90% clay, 10% silt, trace shell fragments, bay mud deposits
			25	
			30	
	38	9115H693	38	DARK GREENISH GRAY SANDY FAT CLAY (CH) 5GY4/1, soft to medium stiff, moist, 60% clay, 40% poorly graded fine-grained sand, bay mud deposits
			35	DARK GREENISH GRAY POORLY GRADED SAND WITH CLAY (SP-SC) 5GY4/1, loose, wet, 90% fine to medium-grained sand, 10% clay, trace very fine gravel, undifferentiated sedimentary deposits
			40	DARK GREENISH GRAY SILTY SAND (SM) 5GY4/1, medium dense, moist, 80-85% well-graded fine to medium-grained sand, 15-20% silt, trace plant debris, undifferentiated sedimentary deposits

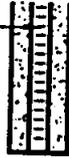


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Log of Boring IR01MWS3B with Well Completion Detail  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

SLOTTED SCREEN  
Schedule 40 PVC  
(0.02 IN. SLOTSIZE)  
34 - 44 ft.



Blogs / 6"

OVA(ppm)

Sample  
Number

Depth (ft)

Sample

0 9115H694



Log of Boring: IR01MW538 (p. 2)  
Equipment: CF-15 (MOR), 10 in. diam.  
Date: 04/11/1991  
Elevation: GS 8.80 feet  
Total Depth: 44 ft.

(37.8 ft)  
LIGHT OLIVE BROWN POORLY GRADED SAND (SP)  
2.5YS/4, very loose, wet,  
95-100% fine- to medium-grained sand, 0-5%  
silt, undifferentiated sedimentary deposits

(39.5 ft)  
YELLOWISH BROWN SILTY SAND (SM)  
10YS/6, medium dense to dense, moist,  
80-85% well-graded fine- to medium-grained  
sand, 15-20% silt, few to little iron oxide  
stainin, undifferentiated sedimentary deposits

LIGHT OLIVE BROWN WELL-GRADED SAND WITH SILT (SW-SM)  
loose, wet,  
90% well-graded fine- to medium-grained sand,  
10% silt, some iron oxide mottling, undifferentiated  
sedimentary deposits

Bottom of boring at 44 feet.



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Log of Boring IR01MW538 with Well Completion Detail  
Naval Station Treasure Island  
Hunters Point Annex  
San Francisco, California

PLATE

DRAWN

JOB NUMBER

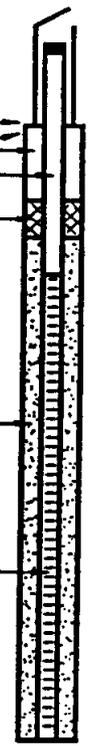
APPROVED

DATE  
12/93

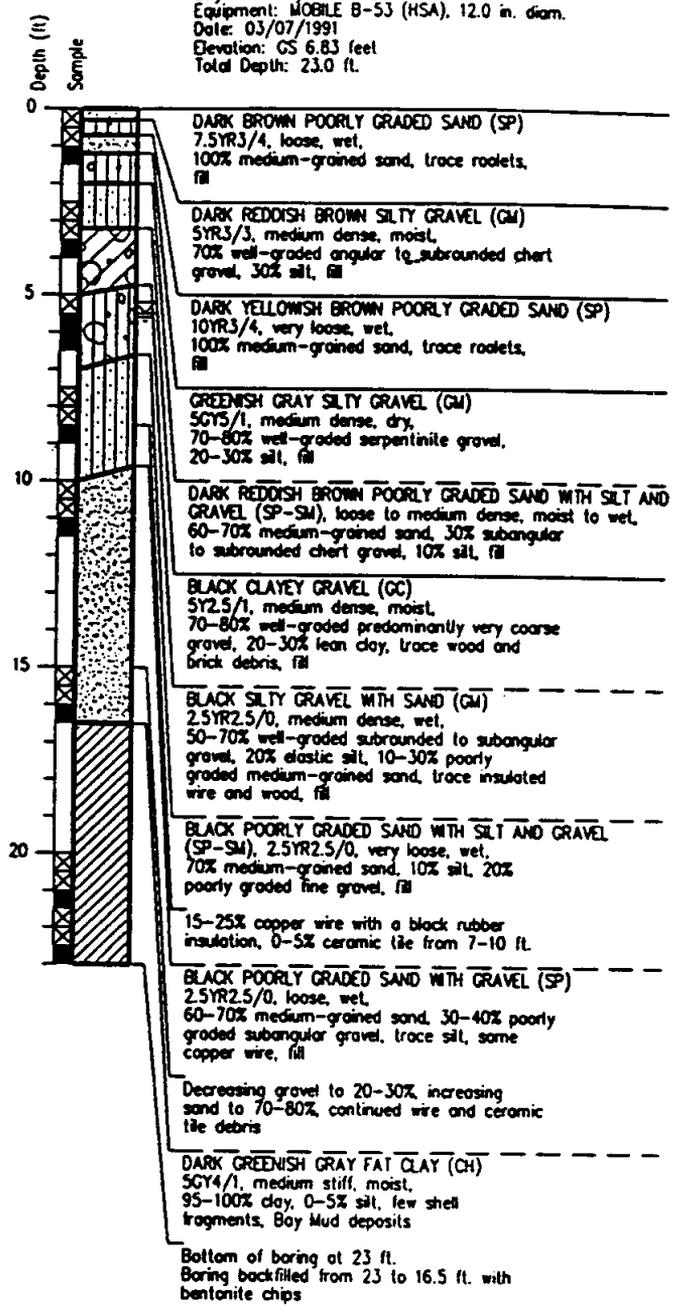
REVISED DATE

Log of Boring: IR01MW58A  
 Equipment: MOBILE B-53 (HSA), 12.0 in. diam.  
 Date: 03/07/1991  
 Elevation: CS 6.83 feet  
 Total Depth: 23.0 ft.

LOCKING COVER  
 BOREHOLE  
 12.00 IN. DIAMETER  
 GROUT  
 Portland Type I-II  
 0.00 - 2.00 ft.  
 BLANK CASING  
 4.00 IN. DIAMETER  
 +2.50 - 4.00 ft.  
 BENTONITE SEAL  
 Pellets  
 2.00 - 3.00 ft.  
 SANDPACK  
 RMC Lonestar #2/16  
 3.00 - 16.50 ft.  
 SLOTTED SCREEN  
 Schedule 40 PVC  
 (0.02 IN. SLOTSIZE)  
 4.00 - 16.50 ft.



Blows / 6"	OVA (ppm)	Sample Number
6		
18		
37	0	9110H616
6		
8		
10	0	9110H617
4		
6		
13	110	9110H618
12		
6		
4	120	9110H619
9		
11		
15	75	9110H620
14		
9		
4		9110H621
2		
3		
3		
2		9110H622
3		
4		9110H623



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Log of Boring and Well Completion Detail: IR01MW58A  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN CMM	JOB NUMBER 18639,160.02	APPROVED	DATE 4/92	REVISED DATE
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LOCKING COVER

BOREHOLE  
12 IN. DIAMETER

GROUT  
Portland Type I-II  
0.0 - 1.5 ft.

BLANK CASING  
4 IN. DIAMETER  
-2.0 - 3.0 ft.

BENTONITE SEAL  
Pellets  
1.5 - 2.5 ft.

SANDPACK  
RMC Lanestar #2/16  
2.5 - 13.0 ft.

SLOTTED SCREEN  
Schedule 40 PVC  
(0.02 IN. SLOTSIZE)  
3.0 - 13.0 ft.



Blows / 6"

OVA(ppm)

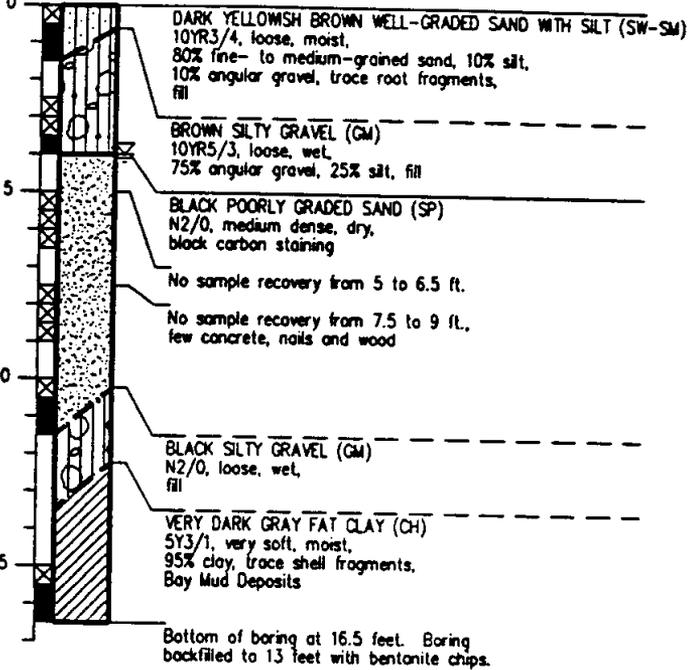
Sample  
Number

13		
21		
16	0	9201N006
12		
16		
16		9201N007
3		
2		
1	100	
7		
8		
9	0	
7		
14		
16	0	9201N008
1		
1		
1	20	9201N009

Log of Boring: IR01MW62A  
Equipment: CME 55 (HSA), 12 in. diam.  
Date: 01/07/1992  
Elevation: GS 6.64 feet  
Total Depth: 16.5 ft.

Depth (ft)

Sample



Harding Lawson Associates  
Engineering and  
Environmental Services

Log of Boring IR01MW62A with Well Completion Detail

PLATE

HUNTER'S POINT ANNEX  
SAN FRANCISCO, CA

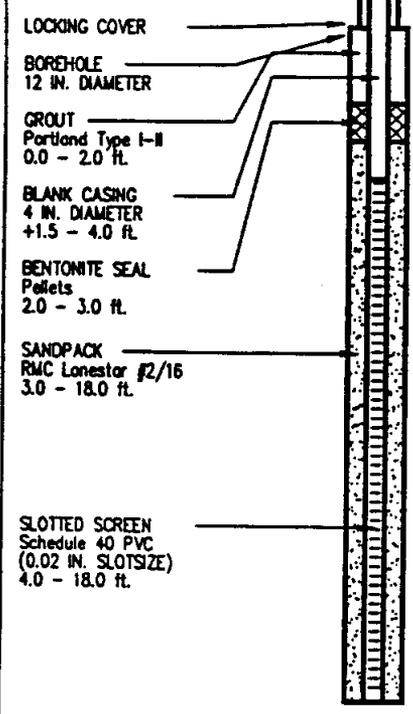
DRAWN  
MF

JOB NUMBER

APPROVED

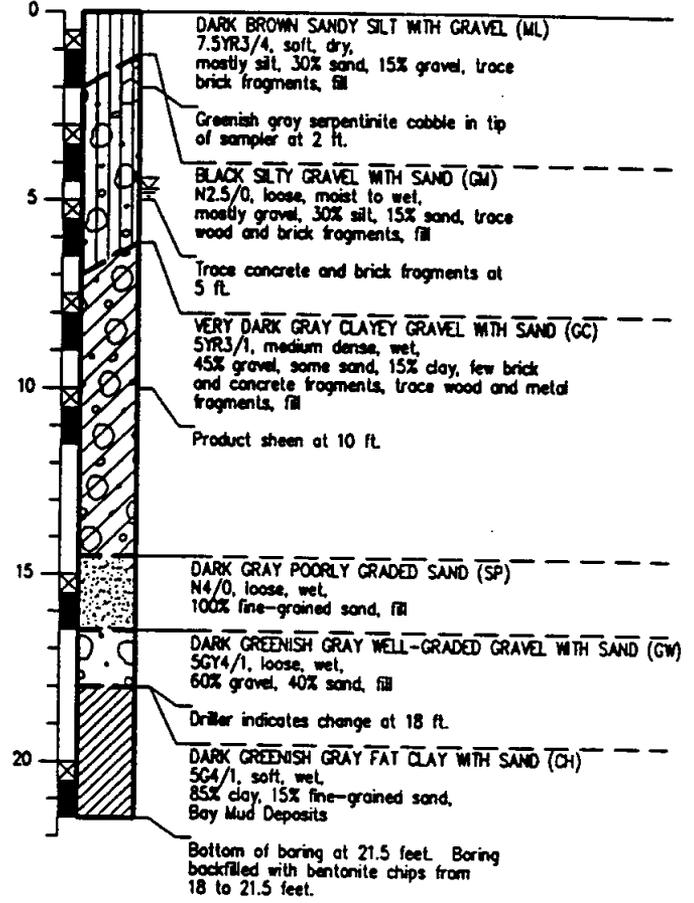
DATE  
11/09/92

REVISED DATE



Blows / 6"	OVA(ppm)	Sample Number
15		
20		
17		9151A048
11		
16	0	9151A049
29		
10		
7		
3	200	9151A050
13		
9		
11	300	9151A051
4		
5		
9	150	9151A052
6		
7		
12	200	9151A053
2		
2		
2	170	9151A054

Log of Boring: IR01MW63A  
 Equipment: CME 55 (HSA), 12 in. diam.  
 Date: 12/18/1991  
 Elevation: GS 6.48 feet  
 Total Depth: 21.5 ft.

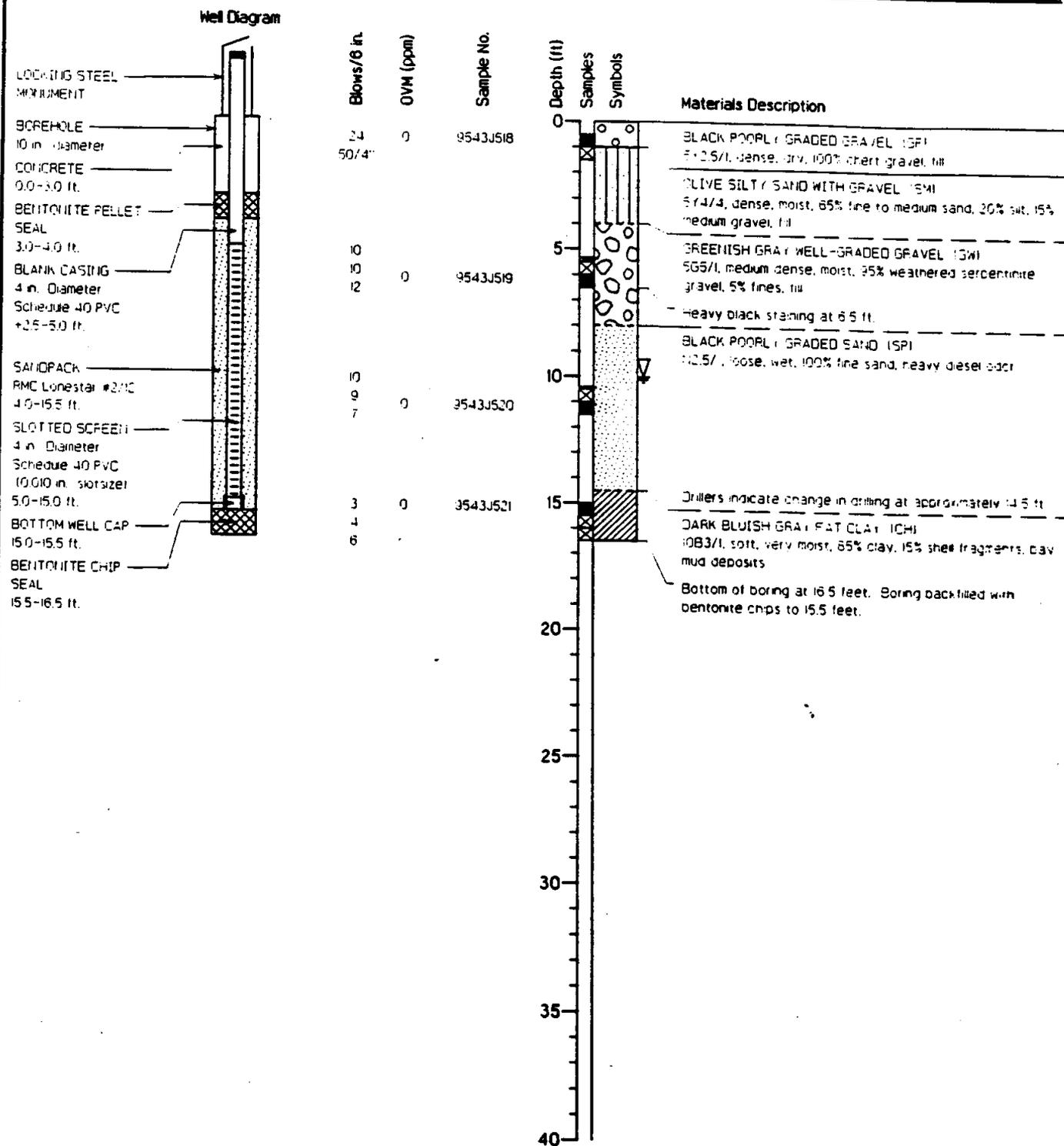


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Log of Boring IR01MW63A with Well Completion Detail  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

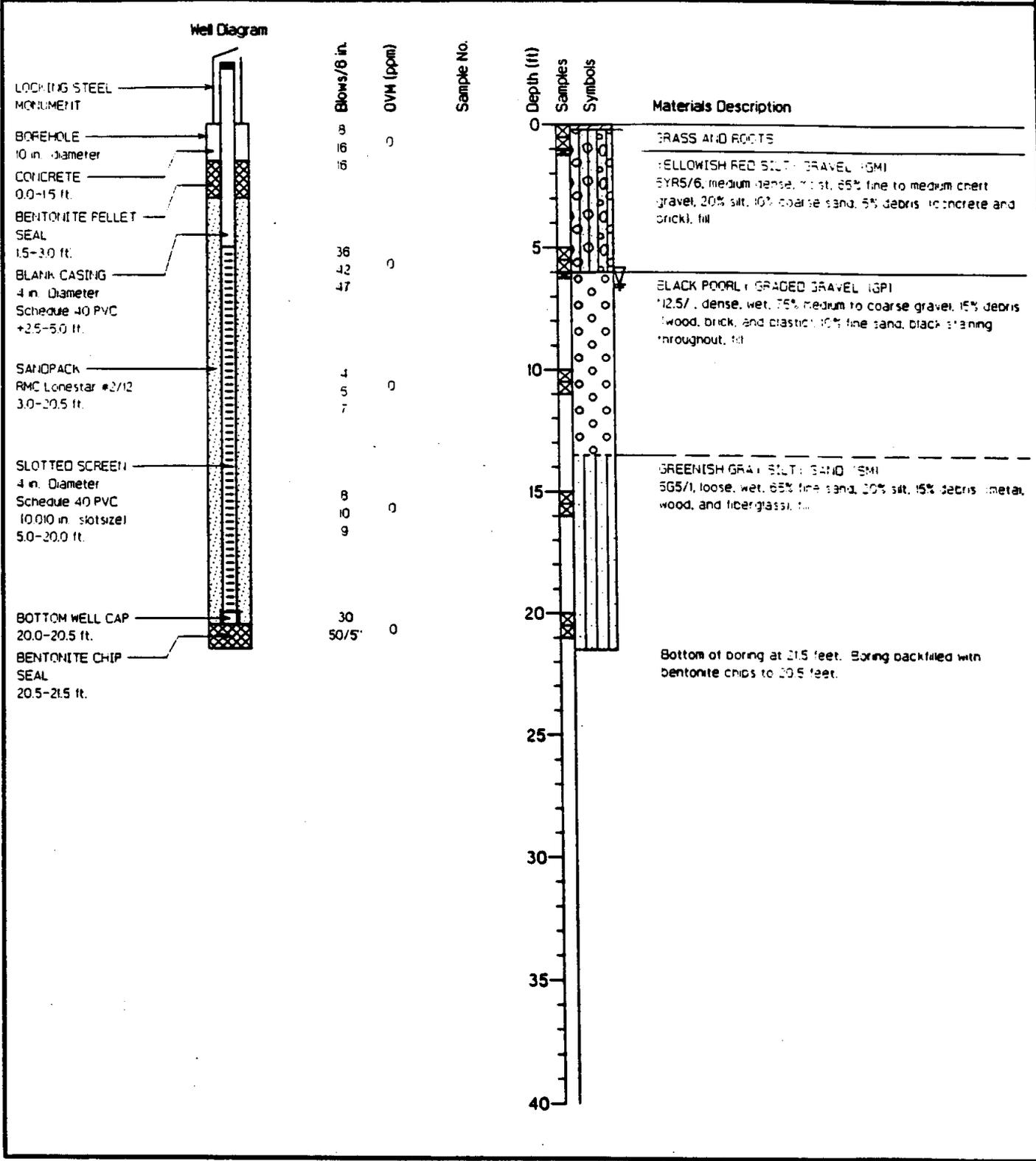
PLATE

DRAWN MF	JOB NUMBER	APPROVED	DATE 11/30/92	REVISED DATE
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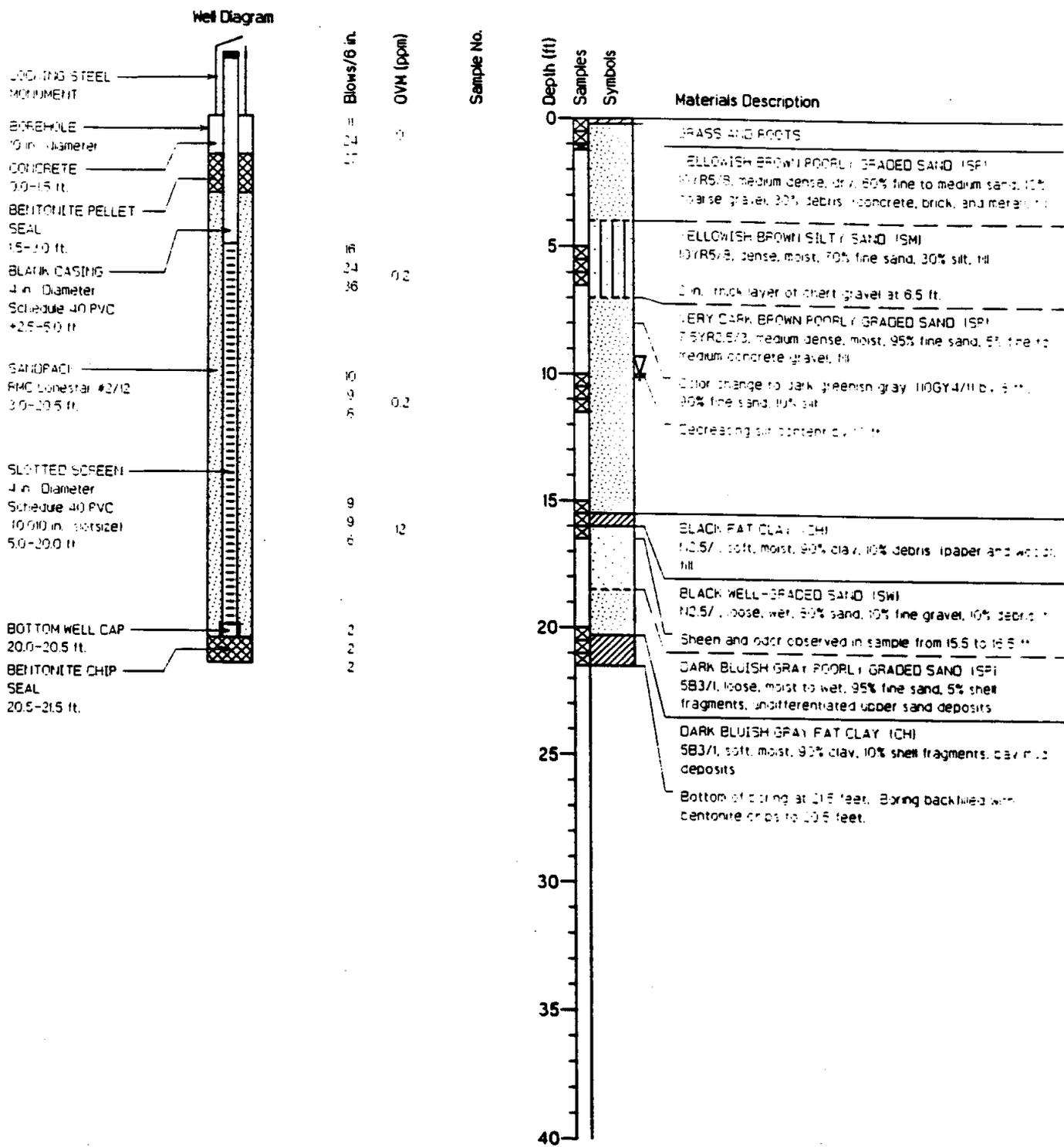


Project Number	CTO 005	Date Drilled	10/24/95
Project Name	Parcel E RI Report	GS Elevation	12.69 ft.
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	10 ft.
Project Location	San Francisco, California	Total Depth Of Borehole	16.5 ft.
Equipment	Air Casing Hammer Rpt, 10 in. diam.		

Figure



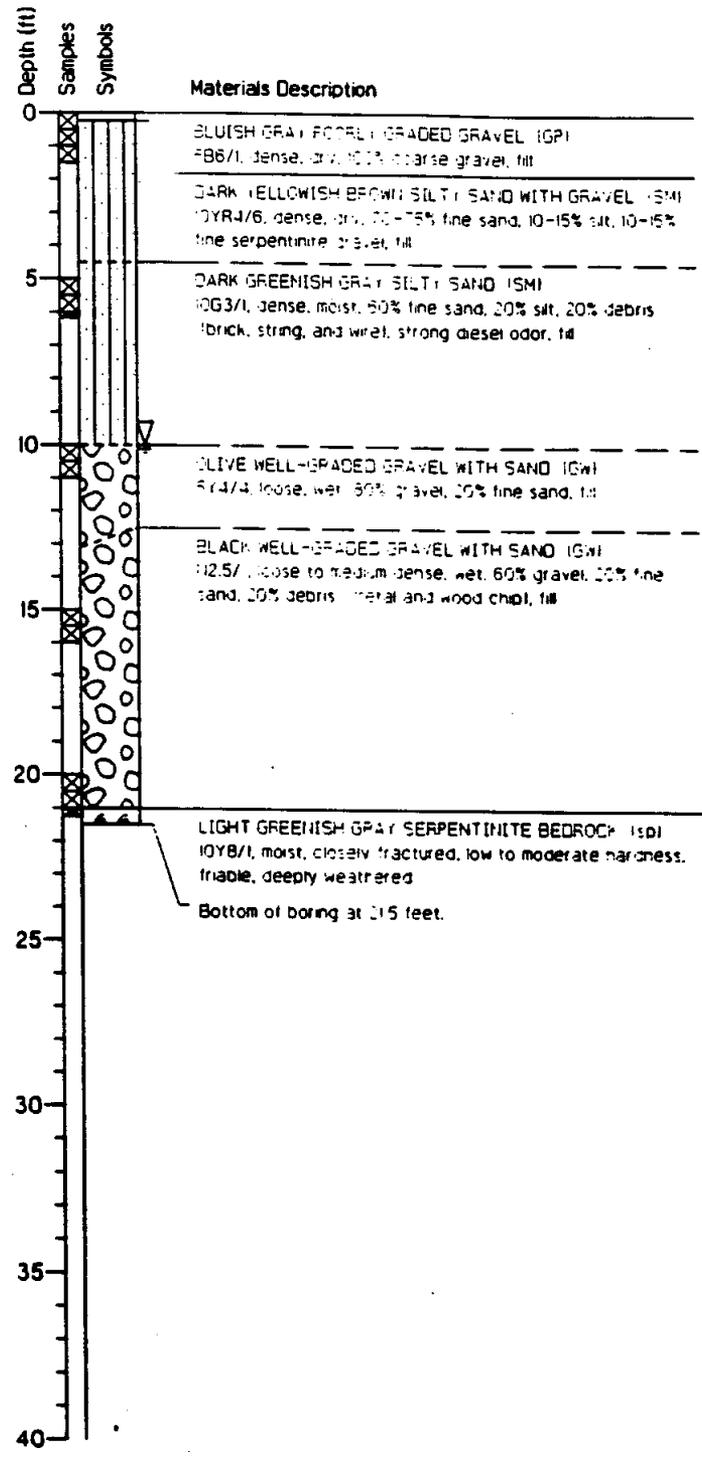
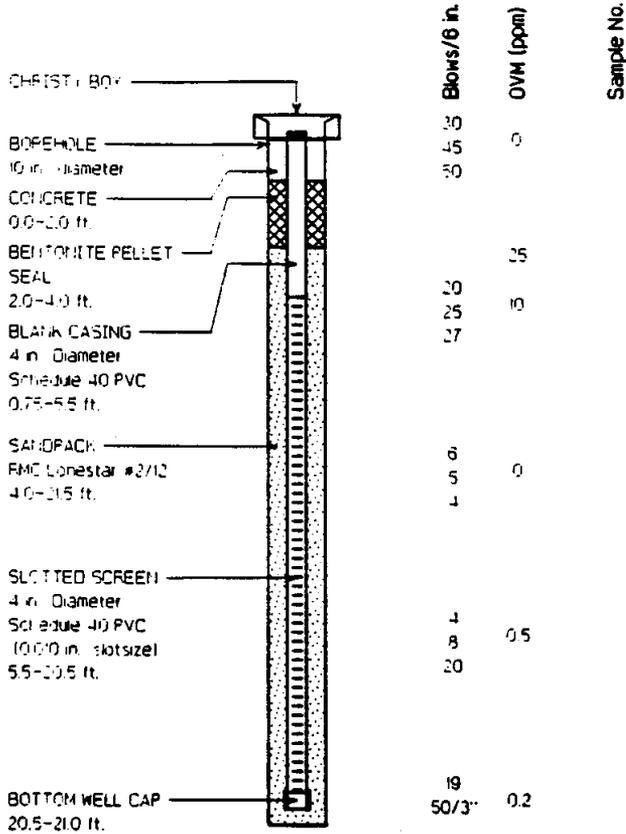
Project Number	OTO 005	Date Drilled	06/20/96	Figure
Project Name	Parcel E RI Report	GS Elevation	NA	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	6.5 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	21.5 ft.	
Equipment	Hollow Stem Auger Rig, 10 in. diam.			



Project Number	CTO 005	Date Drilled	06/20/98
Project Name	Parcel E RI Report	GS Elevation	11A
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	10 ft.
Project Location	San Francisco, California	Total Depth Of Borehole	21.5 ft.
Equipment	Hollow Stem Auger Rig, 10 in. diam.		

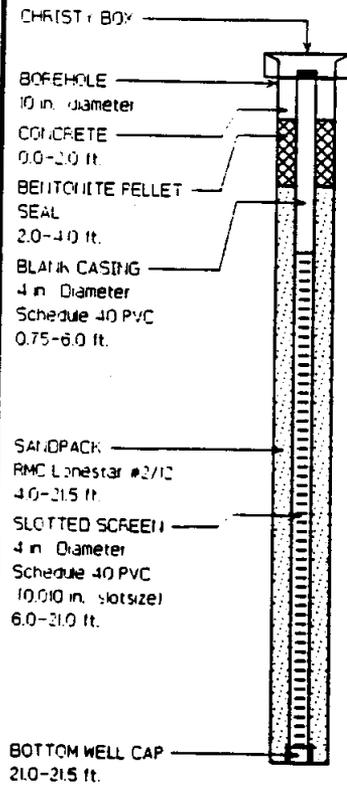
Figure

Well Diagram

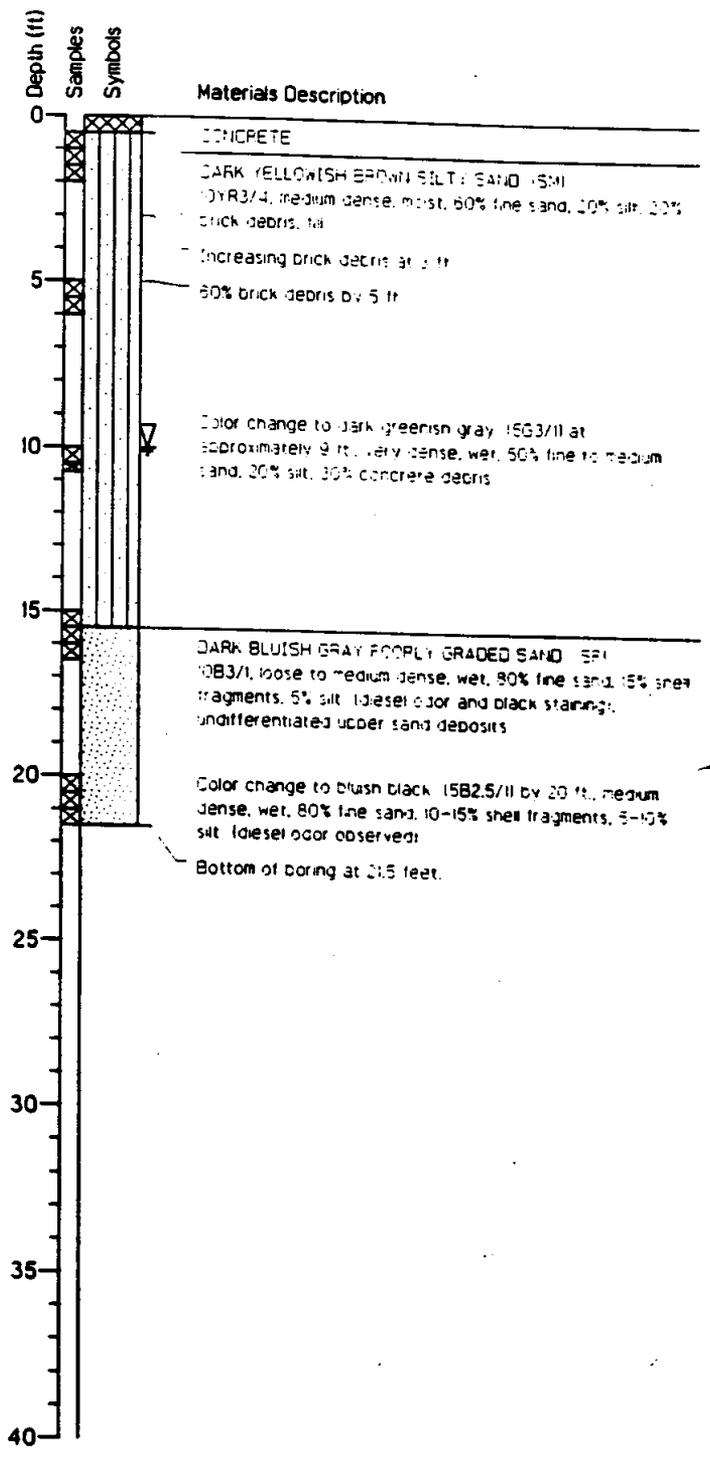


Project Number	DTO 005	Date Drilled	06/25/98	Figure
Project Name	Parcel E RI Report	GS Elevation	13.34 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	10 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	21.5 ft.	
Equipment	Hollow Stem Auger Rig, 10 in. diam.			

Well Diagram



Blows/6 in.	QVM (ppm)	Sample No.
10		
15	0	
18		
14		
10	0	
5		
5	0	
50/4"		
5		
8	5	
14		
15		
10	5	
5		



Project Number	STO 005	Date Drilled	12/21/96	Figure
Project Name	Parcel E RI Report	GS Elevation	12.37 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	10 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	21.5 ft.	
Equipment	Hollow Stem Auger R-1, 10 in. diam.			

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02  
 PROJECT NAME HPNS-Industrial Landfill Area  
 BY SK DATE 9/11/86

BORING NO. I03  
 PAGE 1 OF 1  
 SURFACE ELEV. \*113.51'

PHOTO-VAC (ppm)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
		13		1	1	SW	<p>GRAVELLY SAND-FILL; light olive brown (2.5Y, 5/4); &lt;5% low-plasticity fines; 70% fine to coarse sand; 25-30% fine and coarse gravel; medium dense; dry.                      @ 2-2.5': metal fragments.                      SAND-FILL; pale yellow (5Y, 7/3); &lt;5% low-plasticity fines; 95% fine to medium sand; trace refuse: plastic, metal fragments; medium dense; dry to damp.                      @ 3.5-4': gray (7.5YR, 5/0).                      @ 5-5.5': black cemented aggregate; very moist.                      @6' wet.                      @8-9.5': dark yellowish brown (10YR, 4/6).                      @ 10-10.5': black (2.5Y, 2/0).                      @12.5': 10-15% fine gravel.</p> <p>BOTTOM OF BORING AT 17 FEET.</p>
		20	v,s	2	2	SP	
		17	m	3	3		
		13	5	4	4		
		19	v,s	5	5		
		11	m	6	6		
		13	v,s	7	7		
		8	m	8	8		
		27		9	9		
		25		10	10		
		36		11	11		

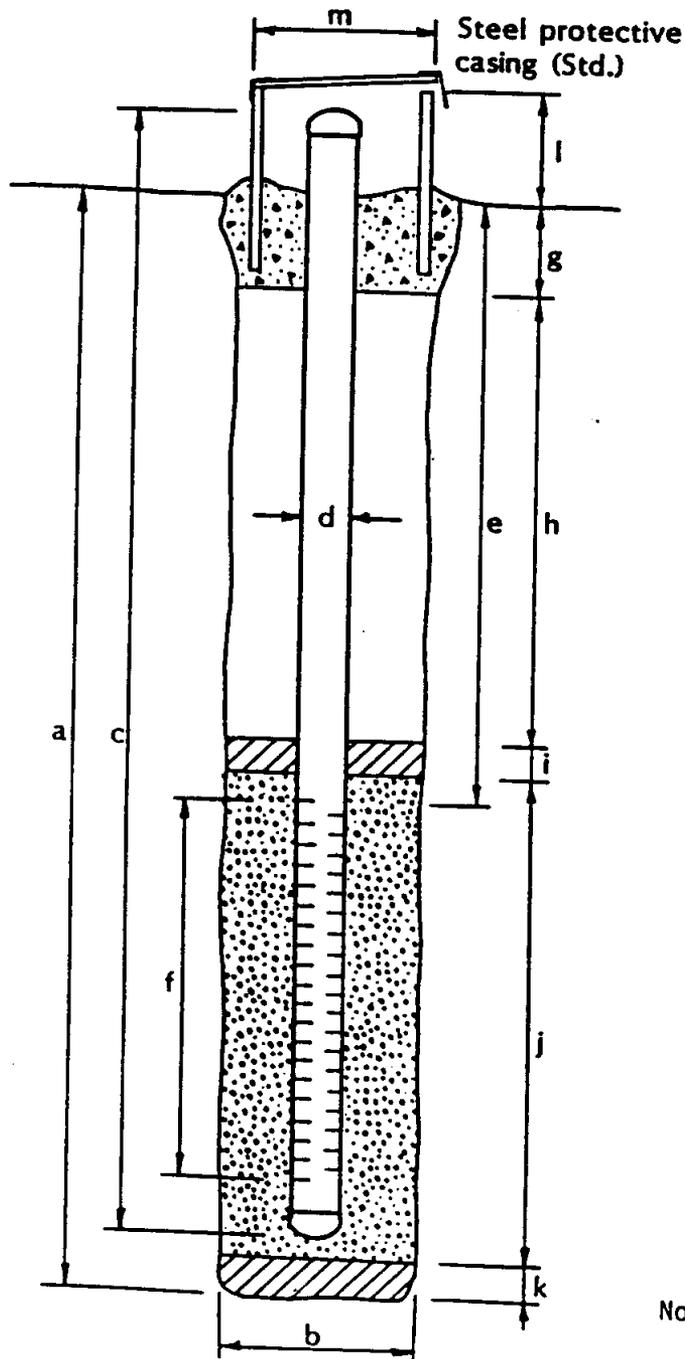
**REMARKS**

Drilled with 8-inch hollow-stem auger; sampled with 2-inch I.D. California modified split-spoon sampler fitted with stainless steel liners. Boring was converted to a 2-inch ground-water monitoring well as detailed on Plate 16. \*Casing elevation is relative to Navy datum.

# WELL DETAILS

PROJECT NUMBER 365-02.02BORING / WELL NO. I03PROJECT NAME HPNS-Industrial LandfillTOP OF CASING ELEV. 113.51'COUNTY San FranciscoGROUND SURFACE ELEV. 112'±

WELL PERMIT NO. \_\_\_\_\_

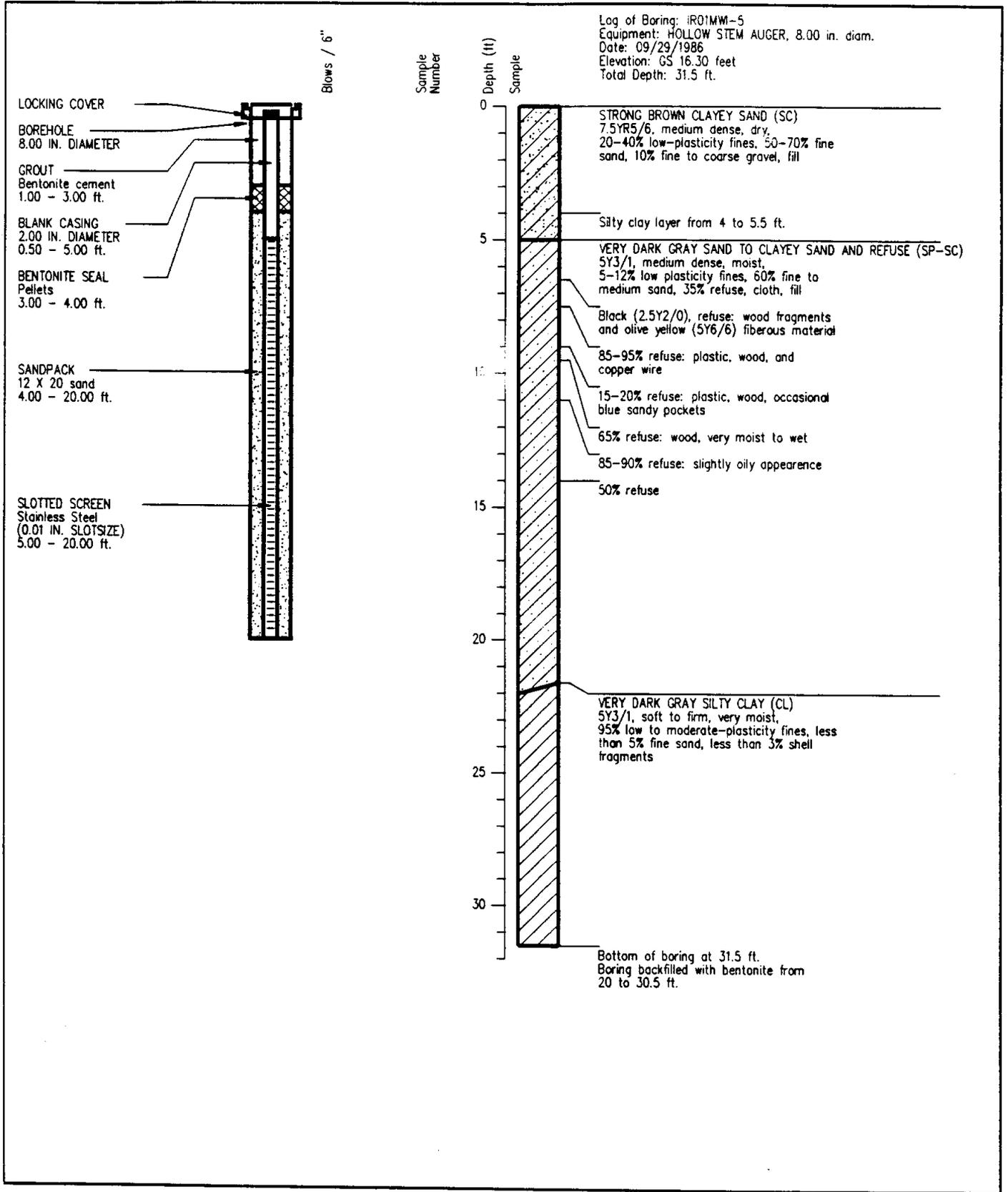
DATUM Navy

## EXPLORATORY BORING

- a. Total depth 17 ft.  
 b. Diameter 8 in.  
 Drilling method Hollow-stem auger

## WELL CONSTRUCTION

- c. Casing length 18 ft.  
 Material stainless steel  
 d. Diameter 2 in.  
 e. Depth to top perforations 4 ft.  
 f. Perforated length 13 ft.  
 Perforated interval from 17 to 4 ft.  
 Perforation type screen  
 Perforation size 0.010 inch  
 g. Surface seal (1 - 0') 1 ft.  
 Seal material cement-bentonite grout  
 h. Backfill (2 - 1') 1 ft.  
 Backfill material cement-bentonite grout  
 i. Seal (3 - 2') 1 ft.  
 Seal material bentonite  
 j. Gravel pack (9 - 3') 6 ft.  
 Pack material 12x20 sand  
 k. Bottom seal N/A ft.  
 Seal material N/A  
 l. Casing height 1.5 ft.  
 m. Protective casing diameter 10 in.
- Note: Boring caved to 9 feet when augers removed.



**Harding Lawson Associates**  
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**Log of Boring IR01MWI-5 with Well Completion Detail**  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN

JOB NUMBER

APPROVED

DATE  
 12/93

REVISED DATE

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02  
 PROJECT NAME HPNS-Industrial Landfill Area  
 BY SK DATE 9/16/86

BORING NO. I06  
 PAGE 1 OF 1  
 SURFACE ELEV. \* 113.19

PHOTO-VAC (ppm)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
		30	v, s, m	1	GW		SANDY GRAVEL-FILL; reddish brown (2.5YR, 5/4); <5% low-plasticity fines; 35% fine to coarse sand; 55-60% coarse gravel; <5% brick fragments; medium dense; dry.
		31		2	SP		SAND-FILL; light gray (2.5Y, 7/2); <5% low-plasticity fines; >95% fine sand <5% brick fragments; loose; dry.
		62	v, s, m	3			@3.5': 1-2% cobble sized brick fragments.
			v, s	5			
		50 for 6"		4	GP		@5.5': black (2.5Y, 2/0); 5% refuse: nails, aggregate; <5% fine gravel; very moist.
		50 for 6"		5			SANDY GRAVEL-FILL; very dark gray (5Y, 3/1); <5% low-plasticity fines; 25-30% fine to coarse sand; 55-70% fine gravel; medium dense; wet.
		50 for 6"		6			@9': 10-15% cobbles.
		10		7			
							BOTTOM OF BORING AT 11.5 FEET.
				15			
				20			

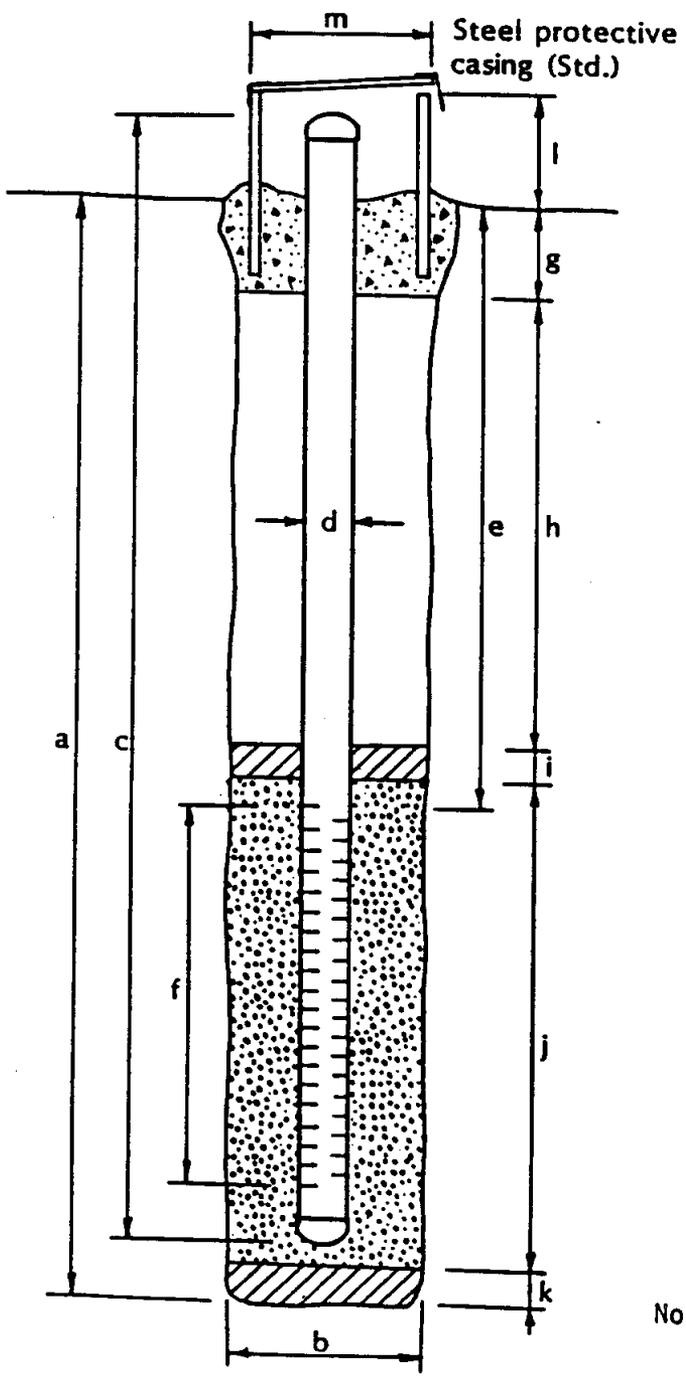
**REMARKS**

Drilled with 8-inch hollow-stem auger; sampled with 2-inch I.D. California modified split-spoon sampler fitted with stainless steel liners. Boring was converted to a 2-inch ground-water monitoring well as detailed on Plate 23. \*Casing elevation is relative to Navy datum.

# WELL DETAILS



PROJECT NUMBER 365-02.02 BORING / WELL NO. 106  
 PROJECT NAME HPNS-Industrial Landfill TOP OF CASING ELEV. 113.19'  
 COUNTY San Francisco GROUND SURFACE ELEV. 112'±  
 WELL PERMIT NO. \_\_\_\_\_ DATUM Navy



## EXPLORATORY BORING

- a. Total depth 11.5 ft.
- b. Diameter 8 in.
- Drilling method Hollow-stem auger

## WELL CONSTRUCTION

- c. Casing length 12.5 ft.  
Material stainless steel
- d. Diameter 2 in.
- e. Depth to top perforations 4 ft.
- f. Perforated length 7.5 ft.  
Perforated interval from 11.5 to 4  
Perforation type screen  
Perforation size 0.010 inch
- g. Surface seal (1 - 0') 1 ft.  
Seal material cement-bentonite grout
- h. Backfill (2 - 1') 1 ft.  
Backfill material cement-bentonite grout
- i. Seal (3 - 2') 1 ft.  
Seal material bentonite
- j. Gravel pack (8 - 3') 5 ft.  
Pack material 12x20 sand
- k. Bottom seal N/A ft.  
Seal material N/A
- l. Casing height 1.5 ft.
- m. Protective casing diameter 10 in.

Note: Boring caved to 8 feet when augers removed.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02  
 PROJECT NAME HPNS-Industrial Landfill Area  
 BY SK DATE 9/16/86

BORING NO. I07  
 PAGE 1 OF 1  
 SURFACE ELEV. \* 109.52'

PHOTO-VAC (ppm)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
				27	1	SP-SW	SAND-FILL; light yellowish brown (2.5Y, 6/4); <5% low-plasticity fines; >90% fine sand; <5% refuse: wood; loose to medium dense; damp to moist.
			▽	6	2	CL	SILTY CLAY; very dark gray (5Y, 3/1); >95% low- to moderate-plasticity fines <5% very fine sand; 1-2% shell fragments; soft; very moist.
				8	3		
				2	4		
				2	5		
				2	6		
				10	7		
				2			
							BOTTOM OF BORING AT 13 FEET.
				15			
				20			

**REMARKS**

Drilled with 8-inch hollow-stem auger; sampled with 2-inch I.D. California modified split-spoon sampler fitted with stainless steel liners. Boring was converted to a 2-inch ground-water monitoring well as detailed on Plate 25. \*Casing elevation is relative to Navy Datum.

# WELL DETAILS



PROJECT NUMBER 365-02.02

BORING / WELL NO. 107

PROJECT NAME HPNS-Industrial Landfill

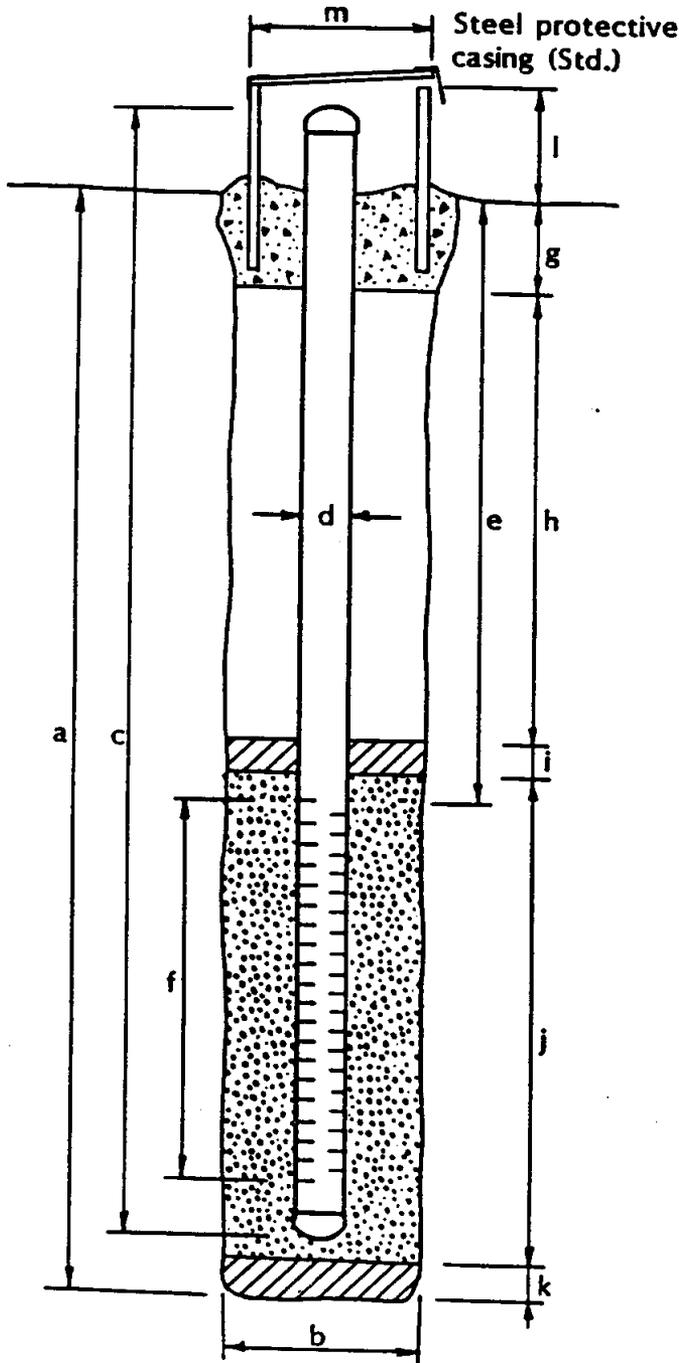
TOP OF CASING ELEV. 109.52'

COUNTY San Francisco

GROUND SURFACE ELEV. 108'±

WELL PERMIT NO. \_\_\_\_\_

DATUM Navy



## EXPLORATORY BORING

- a. Total depth 13 ft.
- b. Diameter 8 in.
- Drilling method Hollow-stem auger

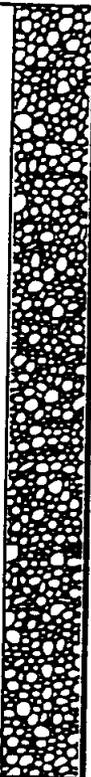
## WELL CONSTRUCTION

- c. Casing length 13.5ft.  
Material stainless steel
  - d. Diameter 2 in.
  - e. Depth to top perforations 3 ft.
  - f. Perforated length 10 ft.  
Perforated interval from 13 to 3 ft.  
Perforation type screen  
Perforation size 0.010 inch
  - g. Surface seal (1 - 0') 1 ft.  
Seal material cement-bentonite grout
  - h. Backfill - ft.  
Backfill material cement-bentonite grout
  - i. Seal (2 - 1') 1 ft.  
Seal material bentonite
  - j. Gravel pack (9½ - 2') 7.5 ft.  
Pack material 12x20 sand
  - k. Bottom seal N/A ft.  
Seal material N/A
  - l. Casing height 1 ft.
  - m. Protective casing diameter 10 in.
- Boring caved to 9.5 feet when augers removed.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02  
 PROJECT NAME HPNS-Industrial Landfill Area  
 BY SK DATE 9/16/86

BORING NO. I08  
 PAGE 1 OF 1  
 SURFACE ELEV. \* 108.34'

PHOTO-VAC (ppm)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
		17	▽	v, s m	1		SANDY GRAVEL TO CLAYEY GRAVEL-FILL; light brownish gray (5Y, 6/2); 5-10% low-plasticity fines; 30% fine to coarse sand; 60% fine and coarse gravel; 1-2% brick fragments; medium dense; very moist to wet.  @5': black (2.5Y, 2/0); trace wood.
		32	▽	v, s m	2		
		57		v, s m	3		
		41		v, s m	4		
		18			5		
		15			6		
		18		10	7		
							BOTTOM OF BORING AT 12.5 FEET.
				15			
				20			

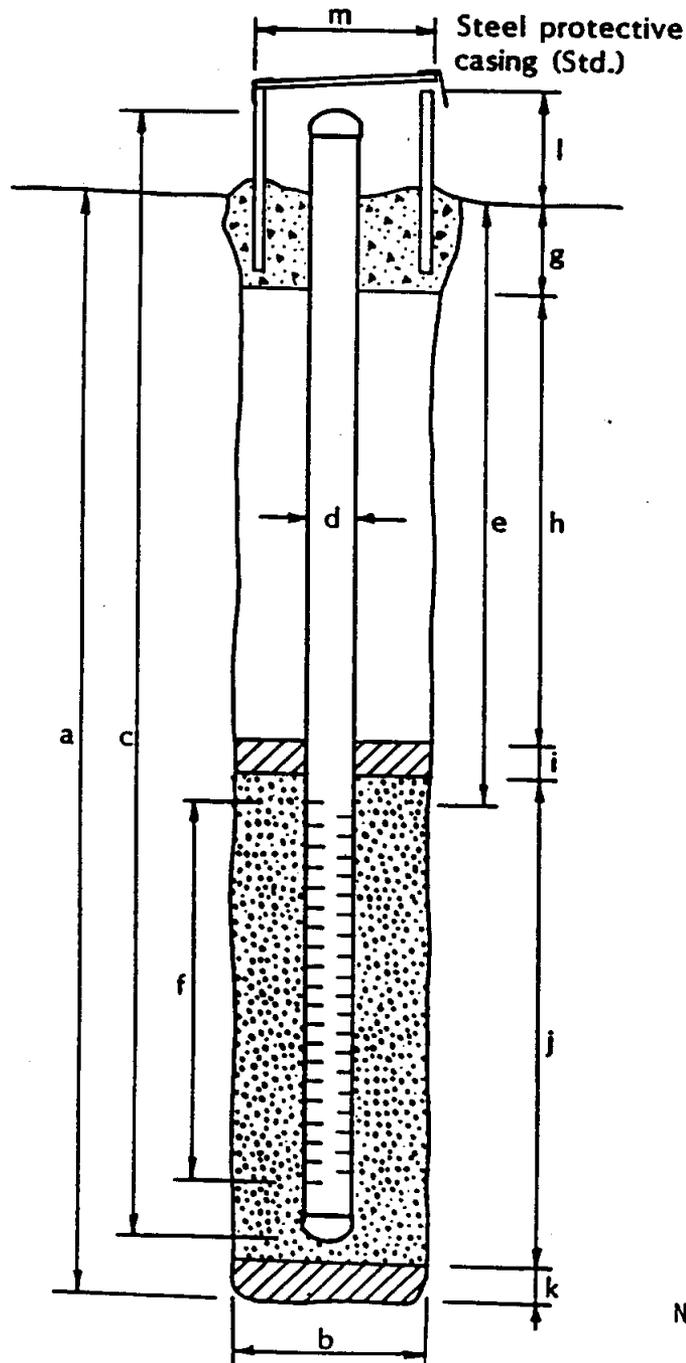
**REMARKS**

Drilled with 8-inch hollow-stem auger; sampled with 2-inch I.D. California modified split-spoon sampler fitted with stainless steel liners. Boring was converted to a 2-inch ground-water monitoring well as detailed on Plate 27. \*Casing elevation is relative to Navy datum.

# WELL DETAILS



PROJECT NUMBER 365-02.02 BORING / WELL NO. 108  
 PROJECT NAME HPNS-Industrial Landfill TOP OF CASING ELEV. 108.34'  
 COUNTY San Francisco GROUND SURFACE ELEV. 107'±  
 WELL PERMIT NO. \_\_\_\_\_ DATUM Navy



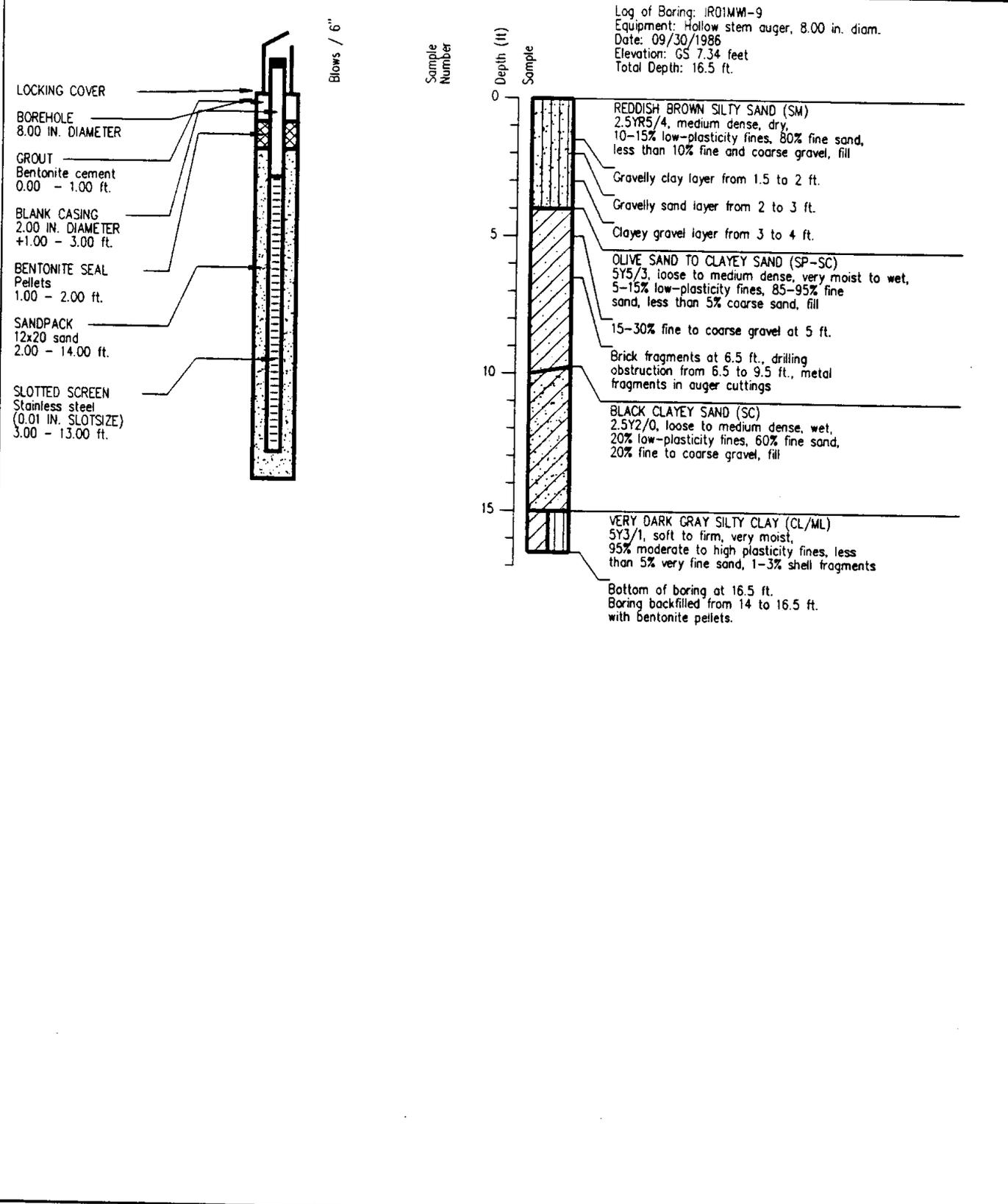
## EXPLORATORY BORING

a. Total depth 12.5 ft.  
 b. Diameter 8 in.  
 Drilling method Hollow-stem auger

## WELL CONSTRUCTION

c. Casing length 13 ft.  
 Material stainless steel  
 d. Diameter 2 in.  
 e. Depth to top perforations 2 ft.  
 f. Perforated length 10 ft.  
 Perforated interval from 12 to 2 ft.  
 Perforation type screen  
 Perforation size 0.010 inch  
 g. Surface seal (1 - 0') 1 ft.  
 Seal material cement-bentonite grout  
 h. Backfill - ft.  
 Backfill material cement-bentonite grout  
 i. Seal (1-3/4 - 1') .75 ft.  
 Seal material bentonite  
 j. Gravel pack (6- 1-3/4') 4.25 ft.  
 Pack material 12x20 sand  
 k. Bottom seal N/A ft.  
 Seal material N/A  
 l. Casing height 1.5 ft.  
 m. Protective casing diameter 10 in.

Note: Boring caved to 6 feet when augers removed.



**Harding Lawson Associates**  
 Engineering and Environmental Services

Log of Boring IR01MWI-9 with Well Completion Detail  
 Naval Station Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

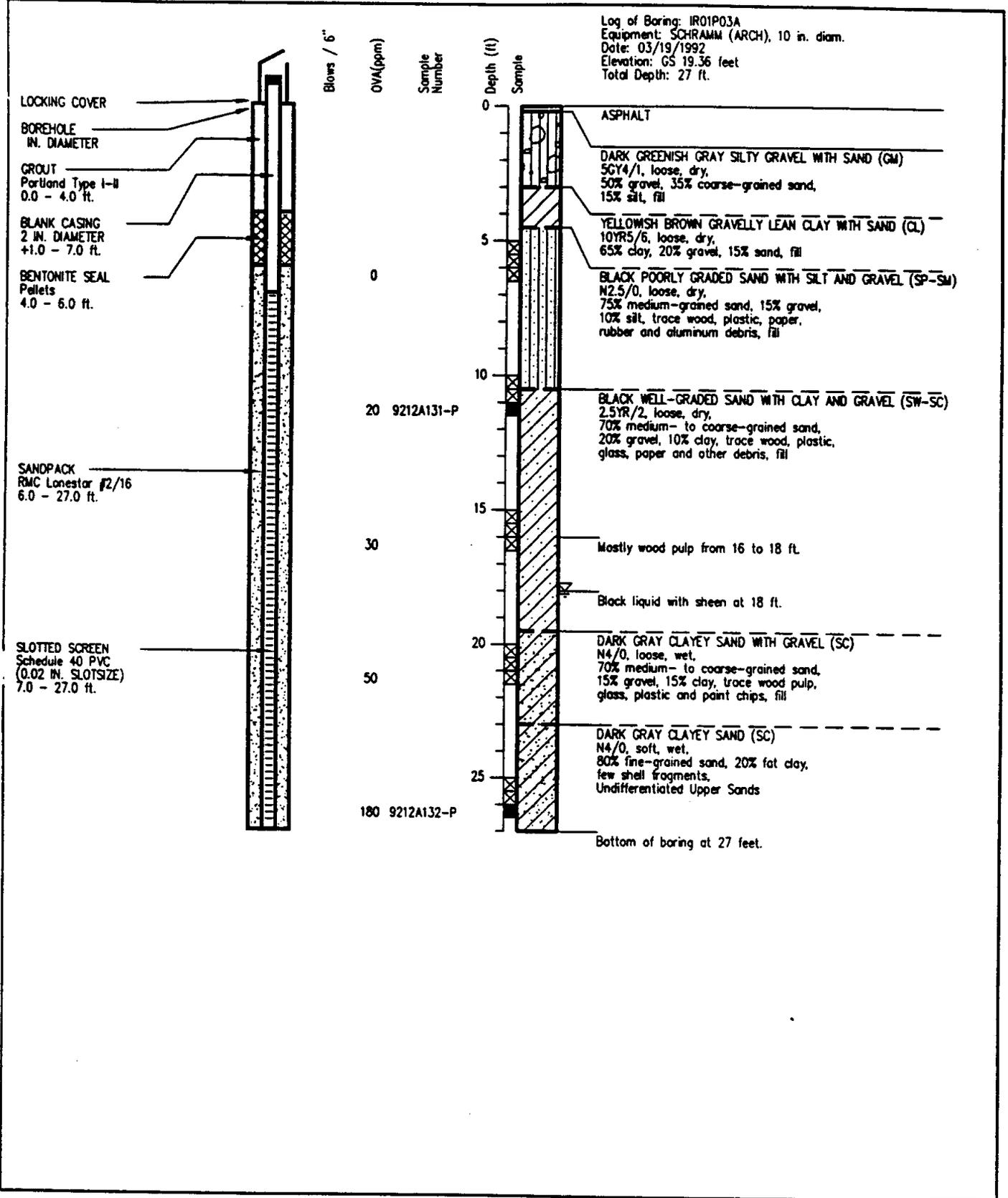
DRAWN

JOB NUMBER

APPROVED

DATE  
 12/93

REVISED DATE



**Harding Lawson Associates**  
 Engineering and Environmental Services

**Log of Boring IR01P03A with Well Completion Detail**

PLATE

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

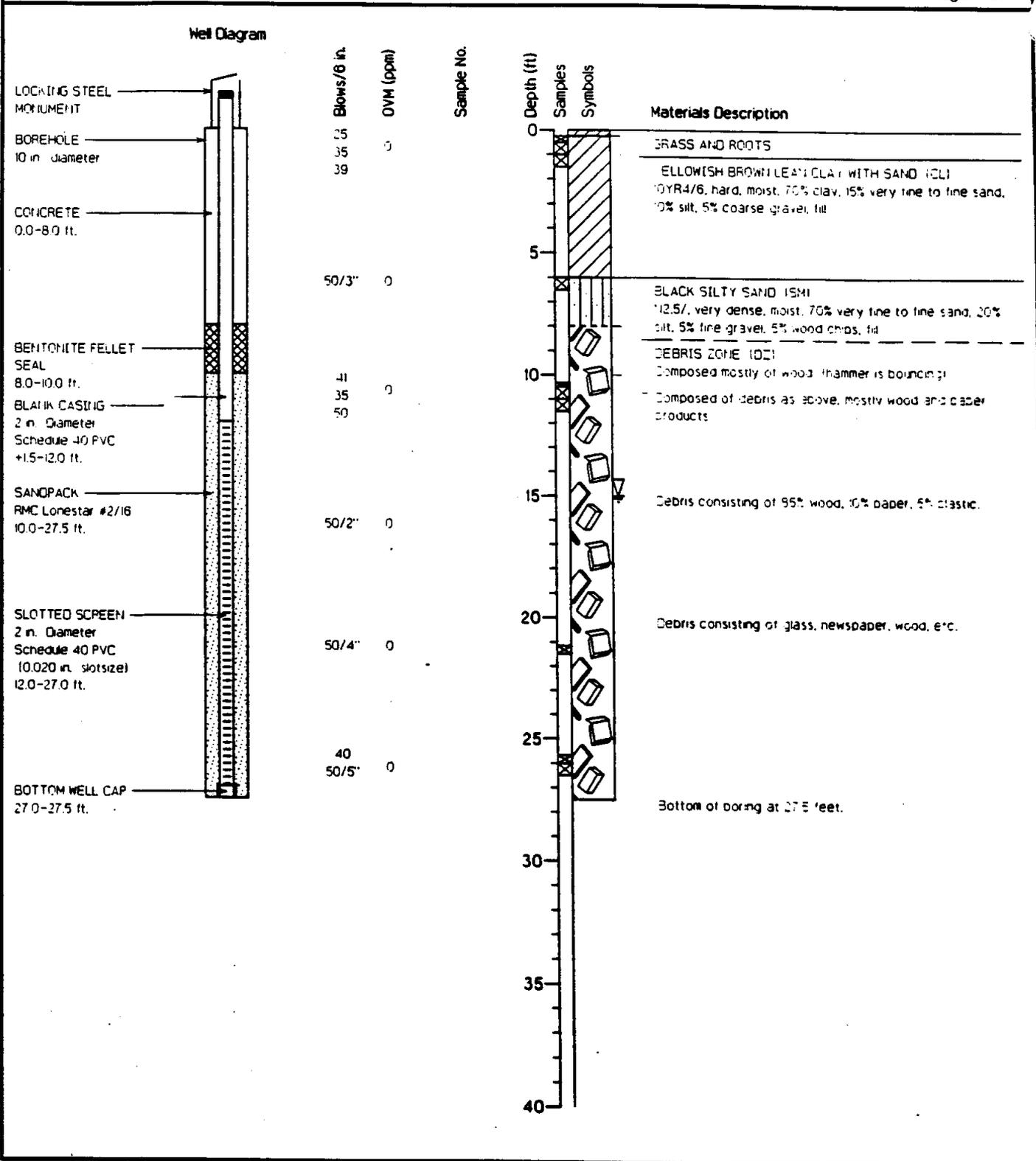
DRAWN  
W.J.F.

JOB NUMBER

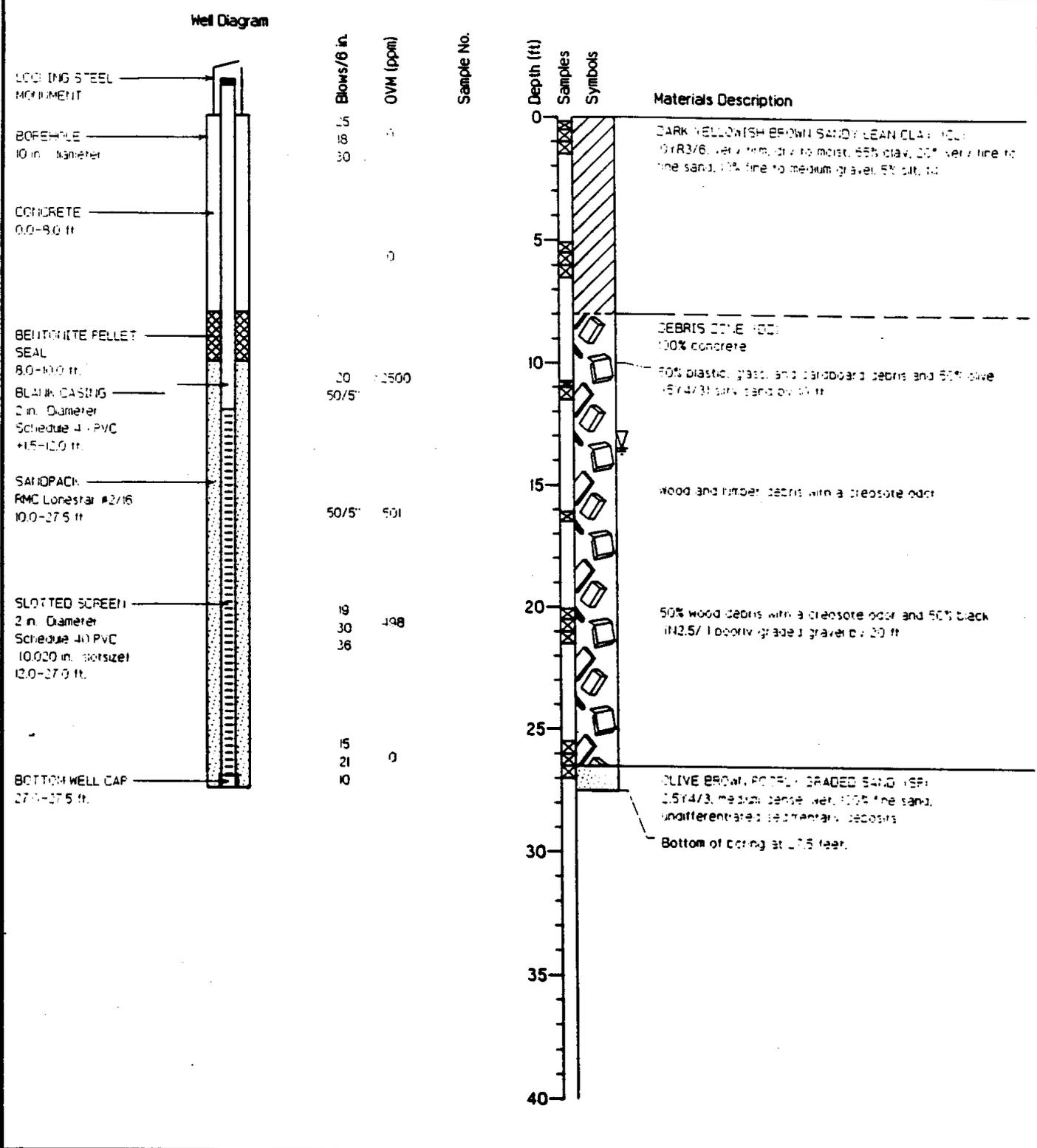
APPROVED

DATE  
10/92

REVISED DATE



Project Number	CTO 005	Date Drilled	10/23/95	Figure
Project Name	Parcel E RI Report	GS Elevation	21.49 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	15 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	27.5 ft.	
Equipment	Air Casing Hammer Rig, 10 in. diam.			



Project Number	STO 005	Date Drilled	10/24/95	Figure
Project Name	Parcel E RI Report	GS Elevation	20.47 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	13.5 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	27.5 ft.	
Equipment	Air Casing Hammer Rpt. 10 in. diam.			

LOG OF TEST PIT 01T03A

Equipment Back Hoe

Elevation 13.0 ft Date 10/26/88

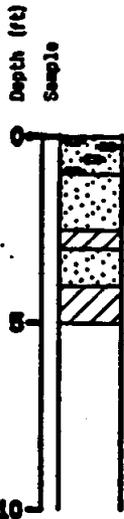


YELLOWISH BROWN SANDY SILT (ML) 10YR 5/8 very stiff, dry, with metal pipe (REFUSE)  
 OLIVE-BROWN SILT (ML) 2.5Y 4/4 very stiff, dry (REFUSE) becoming dark reddish brown, with plastic (5YR 3/2) at 3.0 ft  
 VERY DARK GRAYISH BROWN SILTY GRAVEL WITH SAND (GM) 2.5Y 3/2 medium dense, dry, with glass, metal (REFUSE)  
 YELLOWISH BROWN SAND WITH GRAVEL (SP) (FILL)  
 Bottom of test pit at 5.5 ft

LOG OF TEST PIT 01T03B

Equipment Back Hoe

Elevation 12.5 ft Date 10/26/88

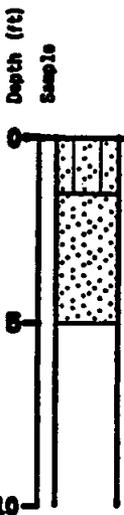


OLIVE-GRAY SANDY GRAVEL (GP) 5Y 4/2 loose, dry (FILL)  
 DARK YELLOWISH BROWN GRAVELLY SAND WITH SILT (SP) 10YR 4/6 medium dense, moist, with brick and concrete debris at 2.0 ft (FILL)  
 DARK OLIVE-GRAY SANDY CLAY (CL) 5Y 3/2 stiff, moist (FILL)  
 DARK YELLOW-BROWN SAND (SP) 10YR 3/4 medium dense, moist, with scrap newspaper (FILL)  
 DARK OLIVE-GRAY GRAVELLY CLAY (CL) stiff, moist, with 10-20% serpentinite gravel (FILL)  
 Bottom of test pit at 5.0 ft

LOG OF TEST PIT 01T04A

Equipment Back Hoe

Elevation 11.5 ft Date 10/26/88



DARK BROWN SILTY SAND WITH GRAVEL (SM) 10YR 3/3 loose, moist with brick wire and wood debris (REFUSE)  
 OLIVE-BROWN SAND (SP) 2.5Y 4/4 medium dense, moist, with iron oxide staining at 1.7 ft (FILL) dark gray with thick oily material at 3.5 ft  
 Bottom of test pit at 5.0 ft



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Logs of Test Pits 01T03A, 01T03B and 01T04A  
 Reconnaissance Activities Report  
 Hunters Point Annex  
 San Francisco, California

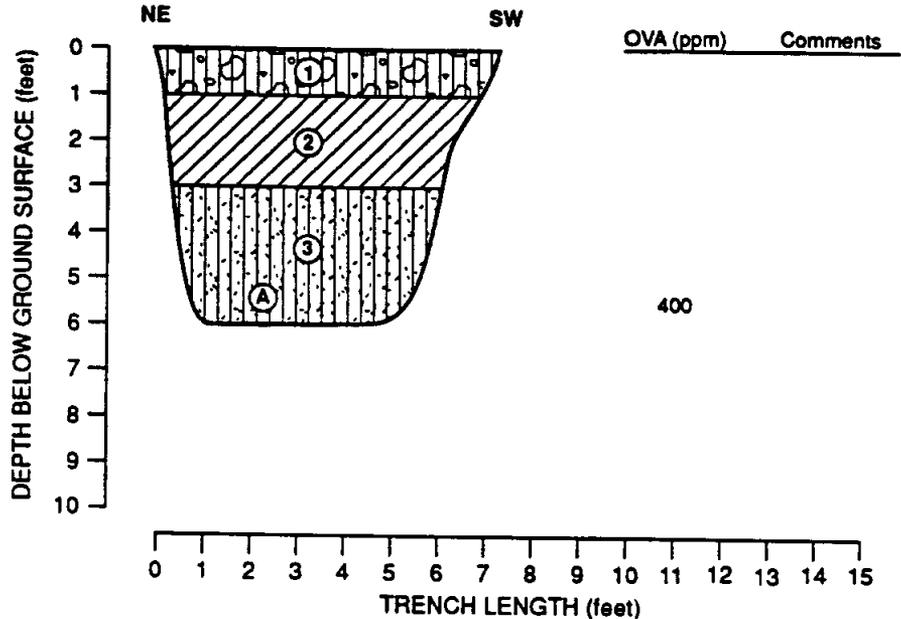
PLATE

**C3**

DRAWN	JOB NUMBER 2176,250.02	APPROVED	DATE 1/90	REVISED DATE
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Trench #: IR01TA01B  
 Site #: IR01  
 Logged by: Gary Thomas  
 Started: 5-29-91  
 Completed: 5-29-91  
 Trench Orientation: N30E  
 Elevation: GS 14.12 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- 
**LIGHT OLIVE BROWN SILTY GRAVEL WITH SAND (GM)**  
 2.5Y 5/6, medium dense, dry to moist, 65-75% fine to coarse serpentinite gravel, 15-20% serpentinite sand, 15% silt, trace cobbles, fill
- 
**DARK OLIVE GRAY LEAN CLAY WITH SAND (CL)**  
 5Y 3/2, medium stiff to stiff, moist, 60-70% clay, 15% sand, 5-10% fine to coarse serpentinite gravel, 5-10% silt, fill
- 
**DARK BROWN SILTY SAND WITH GRAVEL (SM)**  
 10YR 3/3, loose to medium dense, moist, 65% fine- to coarse-grained sand, 15% silt, 20% fine to coarse serpentinite gravel, trace cobbles, trace clay, some brick, wire and wood debris, fill

Color change to greenish gray (5BG 5/1) at 4.0 feet, 10-15% shell fragments

Ⓐ 9123M046

0424LZ



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 Engineering and Environmental Services

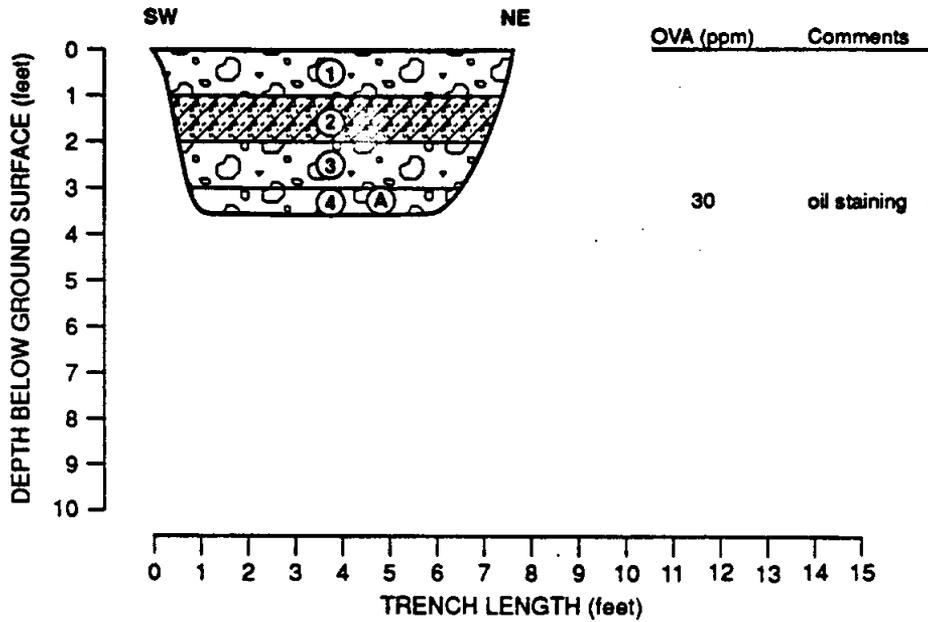
**Log of Test Pit IR01TA01B**  
 Industrial Landfill, IR-1  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN LZc	JOB NUMBER 18639,190.02	APPROVED	DATE 1/92	REVISED DATE
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Trench #: IR01TA02B  
 Site #: IR01  
 Logged by: Rob Nelson  
 Started: 5-23-91  
 Completed: 5-23-91  
 Trench Orientation: N10E  
 Elevation: GS 13.43 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- ① DARK YELLOWISH BROWN WELL-GRADED GRAVEL WITH SAND (GW)  
10YR 4/4, dense, dry, 50% subangular sandstone and serpentinite gravel, 45% sand, 5% silt, fill
- ② LIGHT OLIVE BROWN CLAYEY SAND (SC)  
2.5Y 5/4, dense, dry, 75% very fine- to fine-grained sand, 25% clay, fill
- ③ DARK YELLOWISH BROWN WELL-GRADED GRAVEL WITH SAND (GW)  
dense, dry, 50% subangular sandstone and serpentinite gravel, 45% sand, 5% silt, fill
- ④ becoming black (5Y 5/1) from oil staining and moist at 3 feet
- Ⓐ 9122M041

0413LZ



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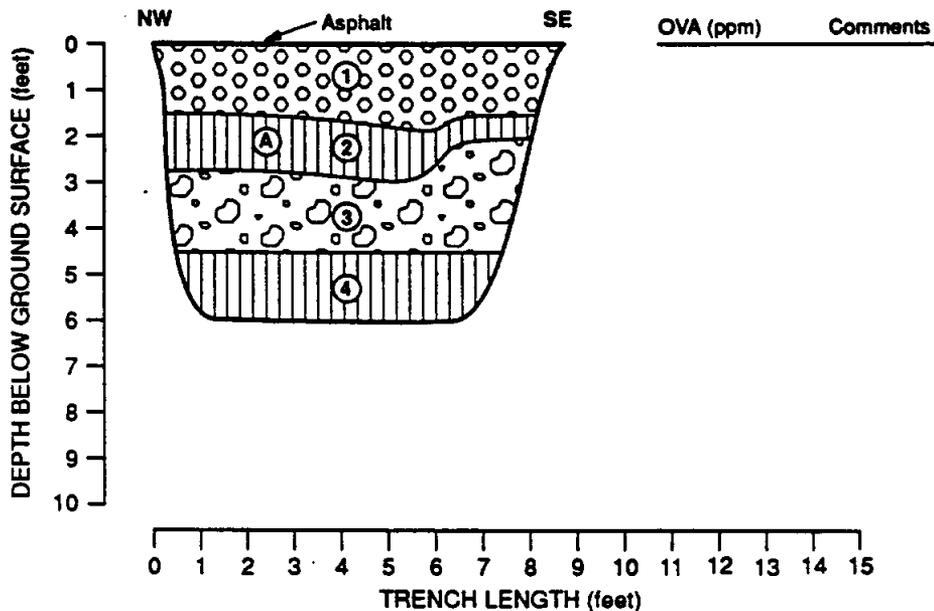
**Log of Test Pit IR01TA02B**  
 Industrial Landfill, IR-1  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN LZc	JOB NUMBER 18639,190.02	APPROVED	DATE 1/92	REVISED DATE
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Trench #: IR01TA05A  
 Site #: IR01  
 Logged by: Rob Nelson  
 Started: 5-20-91  
 Completed: 5-20-91  
 Trench Orientation: N45W  
 Elevation: GS 10.75 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- ① DARK GREENISH GRAY POORLY GRADED GRAVEL (GP)  
5G 4/1, very dense, dry, 95% chert gravel, 5% sand, fill
- ② DARK BROWN SANDY SILT (ML)  
10YR 3/3, very stiff, dry, 50% wood debris, 35% silt, 15% sand, fill
- ③ GRAY WELL-GRADED GRAVEL WITH SAND (GW)  
5Y 5/1, dense, dry, 80% subangular sandstone gravel, 20% sand, fill
- ④ LIGHT OLIVE BROWN SILT WITH SAND (ML)  
2.5Y 5/4, medium stiff, dry to moist, 65% silt, 35% sand, fill
- Ⓐ 9122M034

0413LZ



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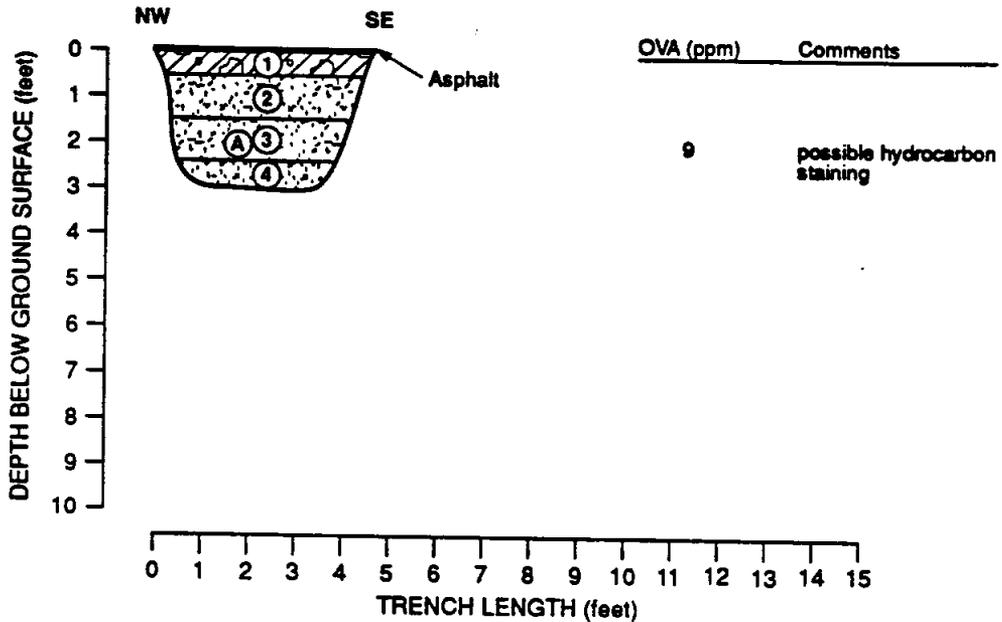
**Log of Test Pit IR01TA05A**  
 Industrial Landfill, IR-1  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN LZc	JOB NUMBER 18639,190.02	APPROVED	DATE 1/92	REVISED DATE
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Trench #: IR01TA07A  
 Site #: IR01  
 Logged by: Rob Nelson  
 Started: 5-21-91  
 Completed: 5-21-91  
 Trench Orientation: N55W  
 Elevation: GS 11.64 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- ① OLIVE BROWN CLAYEY GRAVEL (GC)  
2.5Y 4/3, dense, dry, 55% subangular sandstone, serpentinite, and claystone gravel, 35% clay, 10% sand, fill
- ② DARK BROWN POORLY GRADED SAND (SP)  
7.5YR 3/2, medium dense, dry, 95% fine-grained sand, 5% clay, trace brick and glass fragments, fill
- ③ VERY DARK BROWN POORLY GRADED SAND (SP)  
10YR 2/2, medium dense, dry, 95+% fine-grained sand, 5% clay
- ④ BROWN POORLY GRADED SAND (SP)  
10YR 5/3, loose, dry, 100% medium-grained sand, trace gravel
- Ⓐ 9122M036

0413LZ

PLATE



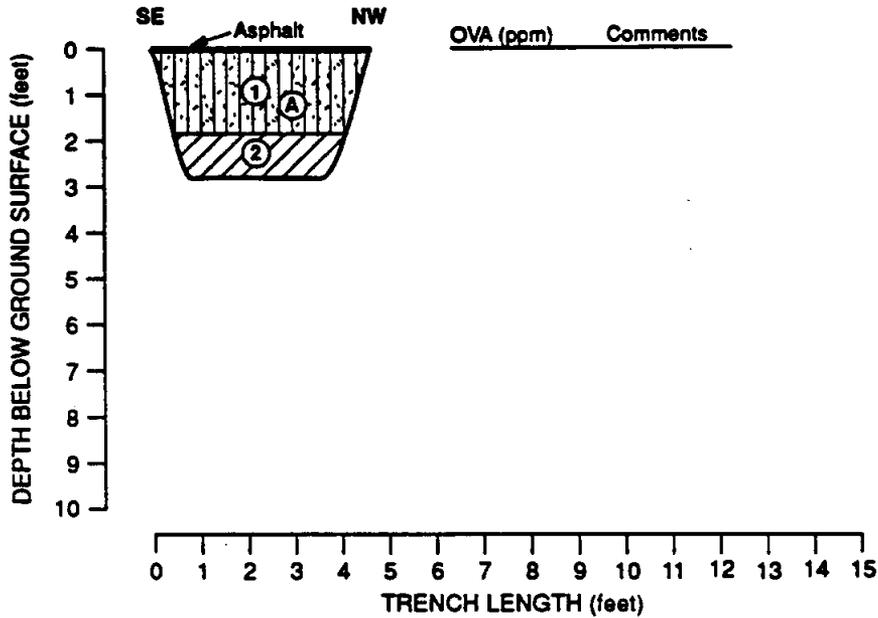
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**Log of Test Pit IR01TA07A**  
 Industrial Landfill, IR-1  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

DRAWN LZc	JOB NUMBER 18639,190.02	APPROVED	DATE 1/92	REVISED DATE
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Trench #: IR01TA08B  
 Site #: IR01  
 Logged by: Rob Nelson  
 Started: 5-22-91  
 Completed: 5-22-91  
 Trench Orientation: N65W  
 Elevation: GS 10.17 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- ① DARK OLIVE GRAY SILTY SAND WITH GRAVEL (SM)  
 5Y 3/2, loose to medium dense, dry, 55% medium fine-  
 to fine-grained sand, 30% silt, 15% gravel, trace wood,  
 metal, glass and cloth debris, fill
- ② DARK GREENISH GRAY LEAN CLAY (CL)  
 5G 4/1, medium stiff, moist, 90% clay, 10% claystone  
 gravel, fill
- Ⓐ 9122M038

0413LZ



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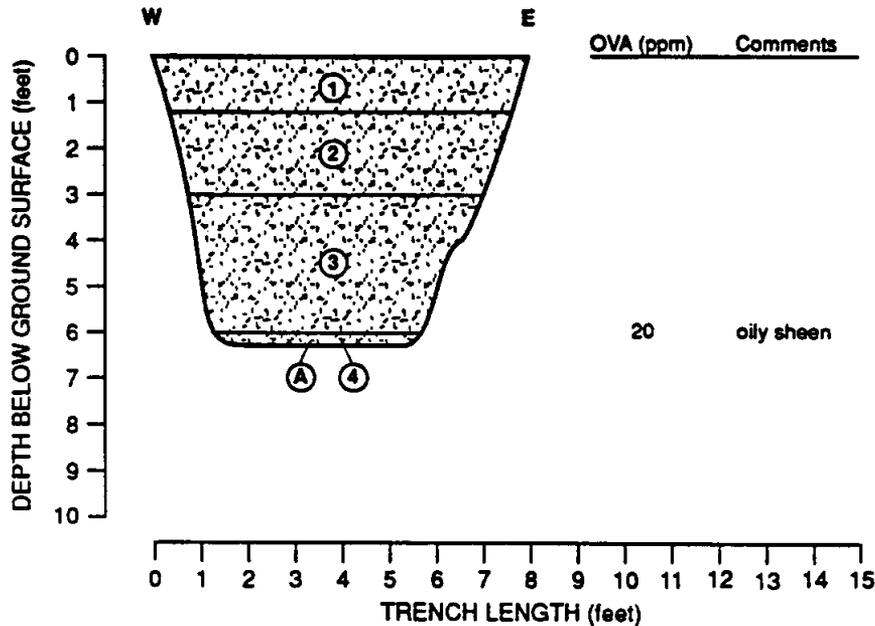
**Log of Test Pit IR01TA08B**  
 Industrial Landfill, IR-1  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN LZc	JOB NUMBER 18639,190.02	APPROVED	DATE 1/92	REVISED DATE
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Trench #: IR02TA10A  
 Site #: IR02  
 Logged by: Rob Nelson  
 Started: 6-6-91  
 Completed: 6-6-91  
 Trench Orientation: N90W  
 Elevation: GS 7.05 feet

**TRENCH DIAGRAM**



**DESCRIPTION:**

- ① VERY DARK GRAYISH BROWN POORLY GRADED SAND (SP)  
 2.5Y 3/2, loose, dry, 95% medium- to coarse-grained sand, 5% silt, trace paint chips and glass, fill
- ② BLACK POORLY GRADED SAND (SP)  
 2.5YR 2/0, loose, dry, 95% medium- to coarse-grained sand, 5% silt, trace paint chips, fill
- ③ OLIVE-BROWN POORLY GRADED SAND (SP)  
 2.5Y 4/4, loose, moist, 95% subrounded medium- to coarse-grained sand, 5% silt, fill
- ④ BLACK POORLY GRADED SAND (SP)  
 2.5YR 2/10, loose, wet, 95% medium- to coarse-grained sand, 5% silt, fill
- Ⓐ 9124M048

0424LZ



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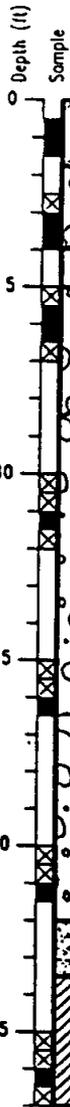
**Log of Test Pit IR02TA10A**  
 Bay Fill Area, IR-2  
 Primary Phase Remedial Investigation  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
LZc	18639,190.02		1/92	

Log of Boring: IR048002  
 Equipment: CME 55 (HSA), 8 in. diam.  
 Date: 10/15/1991  
 Elevation: GS 10.57 feet  
 Total Depth: 27 ft.

Blows / 6"	OVA(ppm)	Sample Number
15 50	0	9142H884
21 14 10	0	9142H885
7 5 4 3	0	9142H886
3 4 4		9142H887
4 5 5	25	9142H888
4 5 5	25	9142H889
1 1 2 2	110	9142H890



GRAY SILTY GRAVEL WITH SAND (GM)  
 SY5/1, medium dense, dry,  
 70% well-graded angular to subrounded  
 gravel, 15% fine-grained sand, 15% silt,  
 fill

Color change to brown (10YR4/3), and  
 increase sand to 20% and silt to 20% at  
 at .5 ft.

Debris at 1.5 ft.

GREENISH GRAY SERPENTINITE BOULDER FILL  
 SGY5/1, moist,  
 crushed to occasionally fractured

DARK OLIVE GRAY SANDY SILT (ML)  
 SY3/2, medium stiff, moist,  
 60% silt, 25-30% fine-grained sand, 10-15%  
 fine to medium angular to subangular  
 gravel, fill

OLIVE SILTY GRAVEL WITH SAND (GM)  
 SY4/3, medium dense, moist,  
 50% moderately fractured, weathered serpent-  
 inite gravel, 30% silt, 20% serpentinite  
 sand, trace black silty sand lenses, fill

DARK GREENISH GRAY SERPENTINITE BOULDER FILL  
 SGY4/1, medium dense, wet,  
 crushed to occasionally fractured

Wet at 11 ft.

DARK GREENISH GRAY POORLY GRADED SAND (SP)  
 SG4/1, loose, wet,  
 fine-grained sand, Bay Mud Deposits

DARK GREENISH GRAY FAT CLAY (CH)  
 SGY4/1, medium stiff, moist,  
 90% clay, 10% silt, little shell fragments,  
 Bay Mud Deposits

Bottom of boring at 27 feet. Boring  
 backfilled with bentonite cement grout  
 (10/15/91).



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Log of Boring IR048002

Naval Station, Treasure Island  
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PLATE

DRAWN  
 WJF

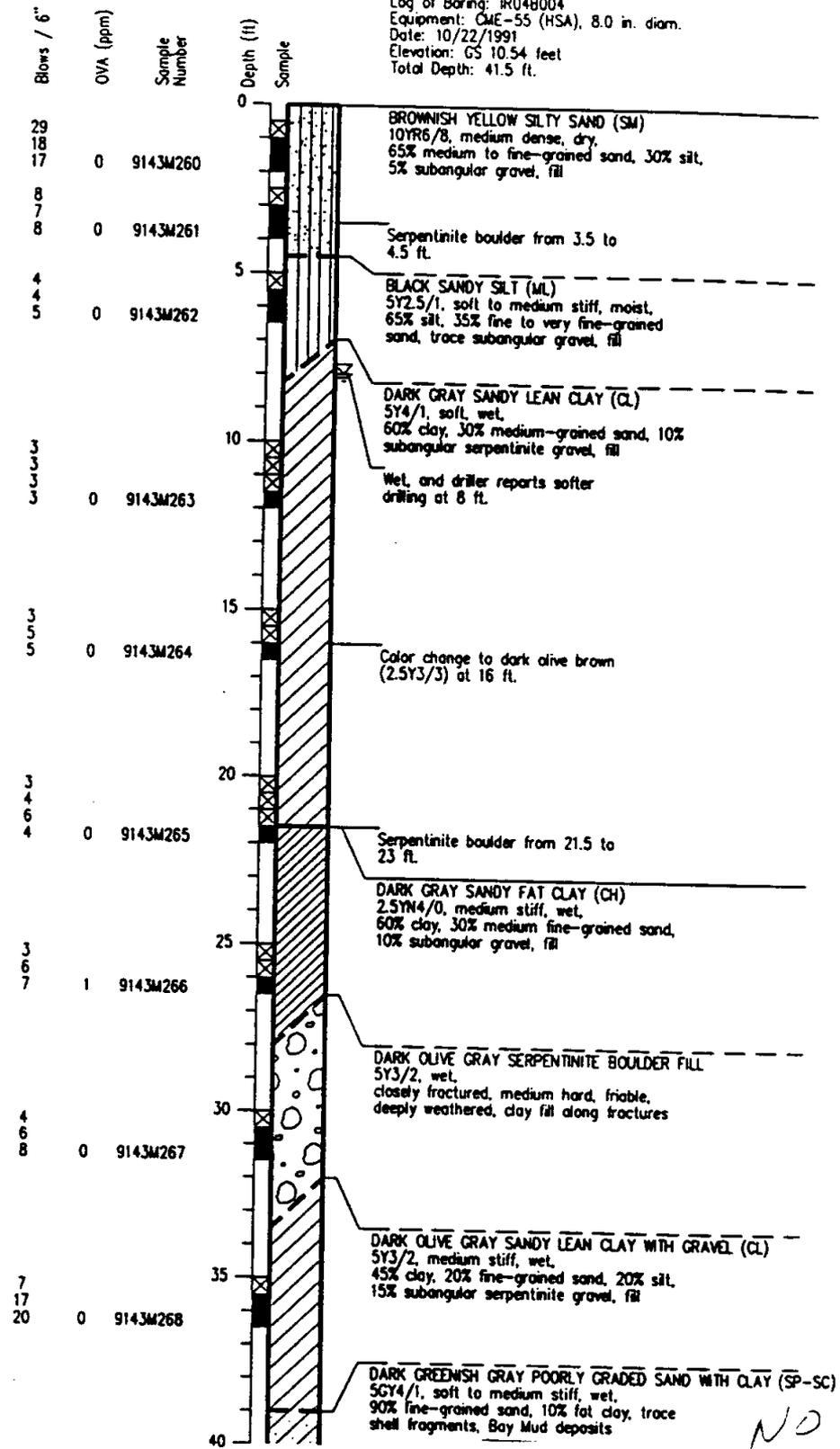
JOB NUMBER  
 11400 012402

APPROVED

DATE  
 10/92

REVISED DATE

Log of Boring: IR04B004  
 Equipment: CME-55 (HSA), 8.0 in. diam.  
 Date: 10/22/1991  
 Elevation: GS 10.54 feet  
 Total Depth: 41.5 ft.



ND

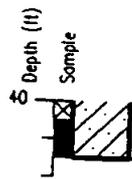


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Log of Boring: IR04B004  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

Blows / 6"  
 3-4-3  
 OVA (ppm)  
 12  
 Sample Number  
 9143M269



Log of Boring: IR04B004 (p. 2)  
 Equipment: CME-55 (HSA), 8.0 in. diam.  
 Date: 10/22/1991  
 Elevation: GS 10.54 feet  
 Total Depth: 41.5 ft.

(39.0 ft)  
 Driller notes softer drilling at 39 ft.

Bottom of boring at 41.5 ft. Boring  
 backfilled with bentonite cement grout  
 (10/22/91)



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Log of Boring: IR04B004  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
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PLATE

DRAWN  
 CMM

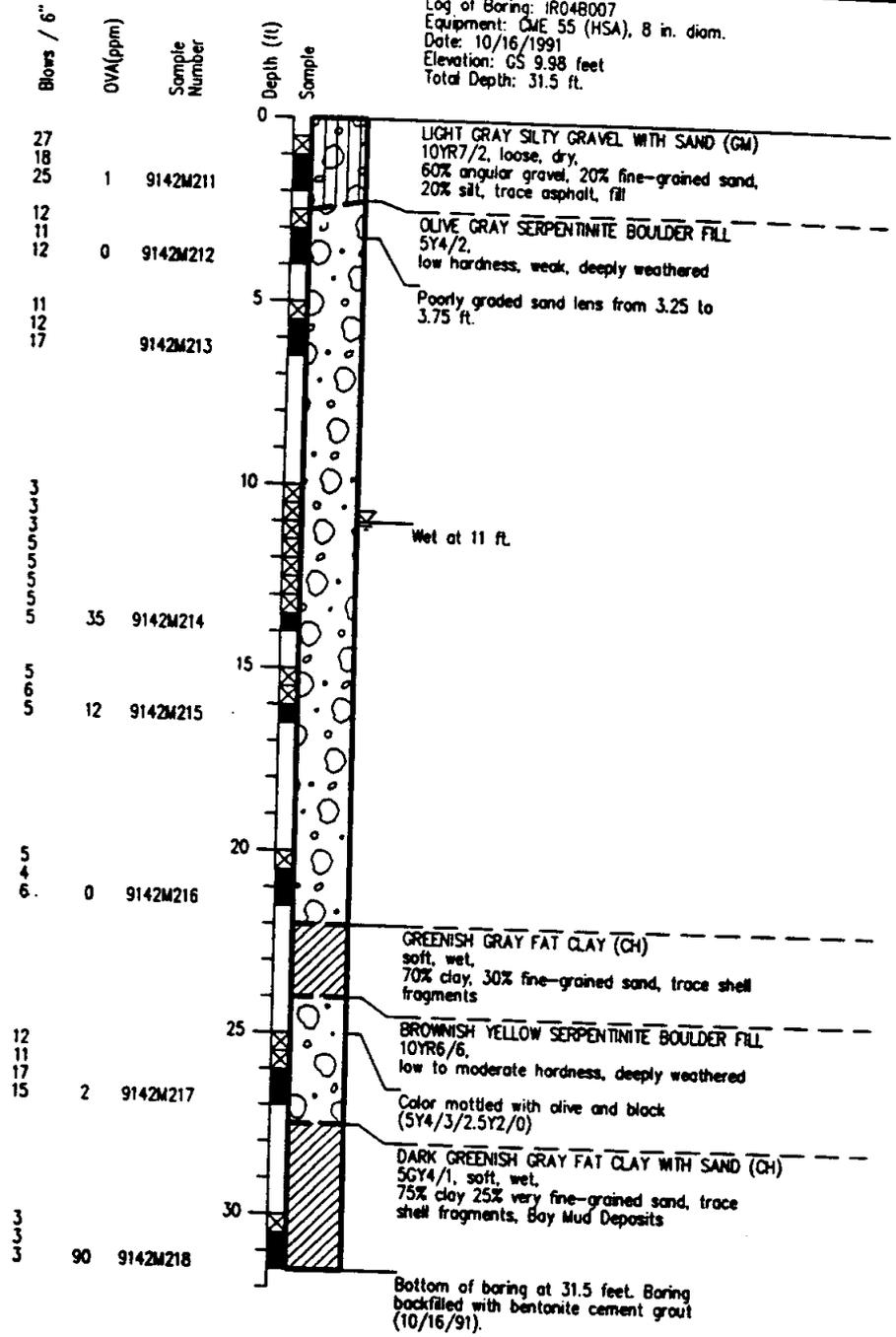
JOB NUMBER  
 18639,305.02

APPROVED

DATE  
 2/92

REVISED DATE

Log of Boring: IR04B007  
 Equipment: CME 55 (HSA), 8 in. diam.  
 Date: 10/16/1991  
 Elevation: GS 9.98 feet  
 Total Depth: 31.5 ft.



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Log of Boring IR04B007

PLATE

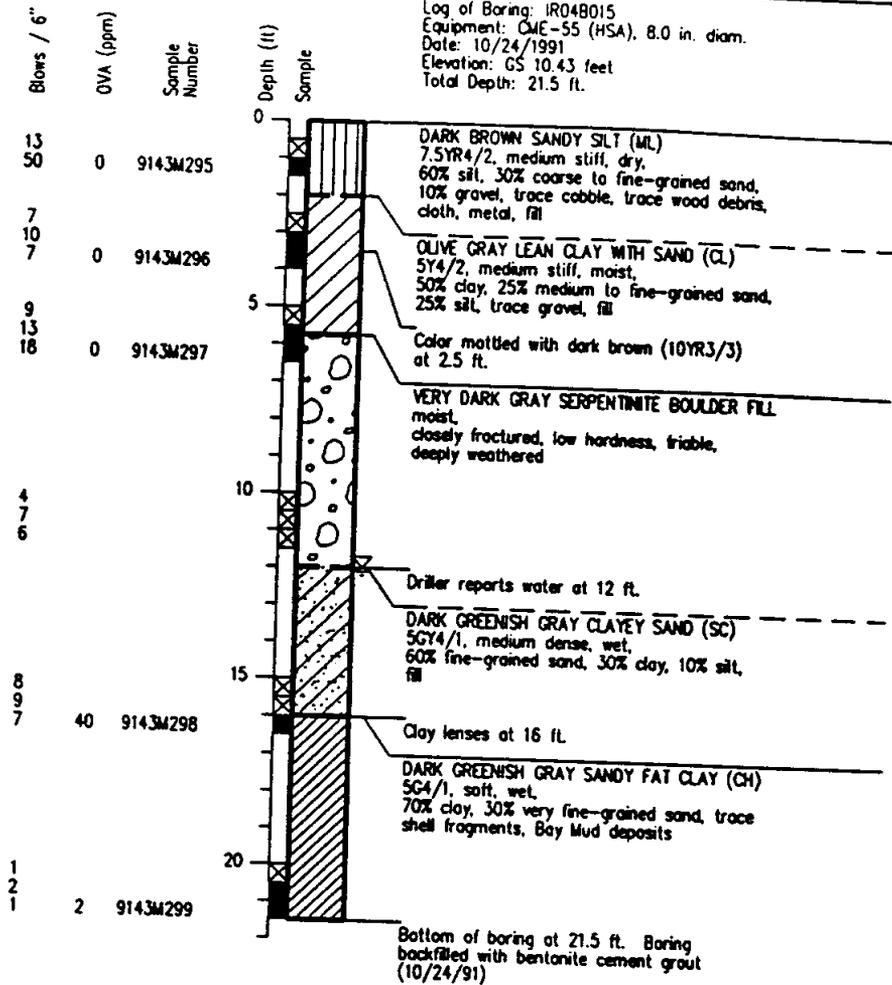
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16/6

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 San Francisco, California

JOB NUMBER \_\_\_\_\_ APPROVED \_\_\_\_\_ DATE 10/92 REVISION DATE \_\_\_\_\_

Log of Boring: IR04B015  
 Equipment: CME-55 (HSA), 8.0 in. diam.  
 Date: 10/24/1991  
 Elevation: GS 10.43 feet  
 Total Depth: 21.5 ft.



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Log of Boring: IR04B015  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
 CMM

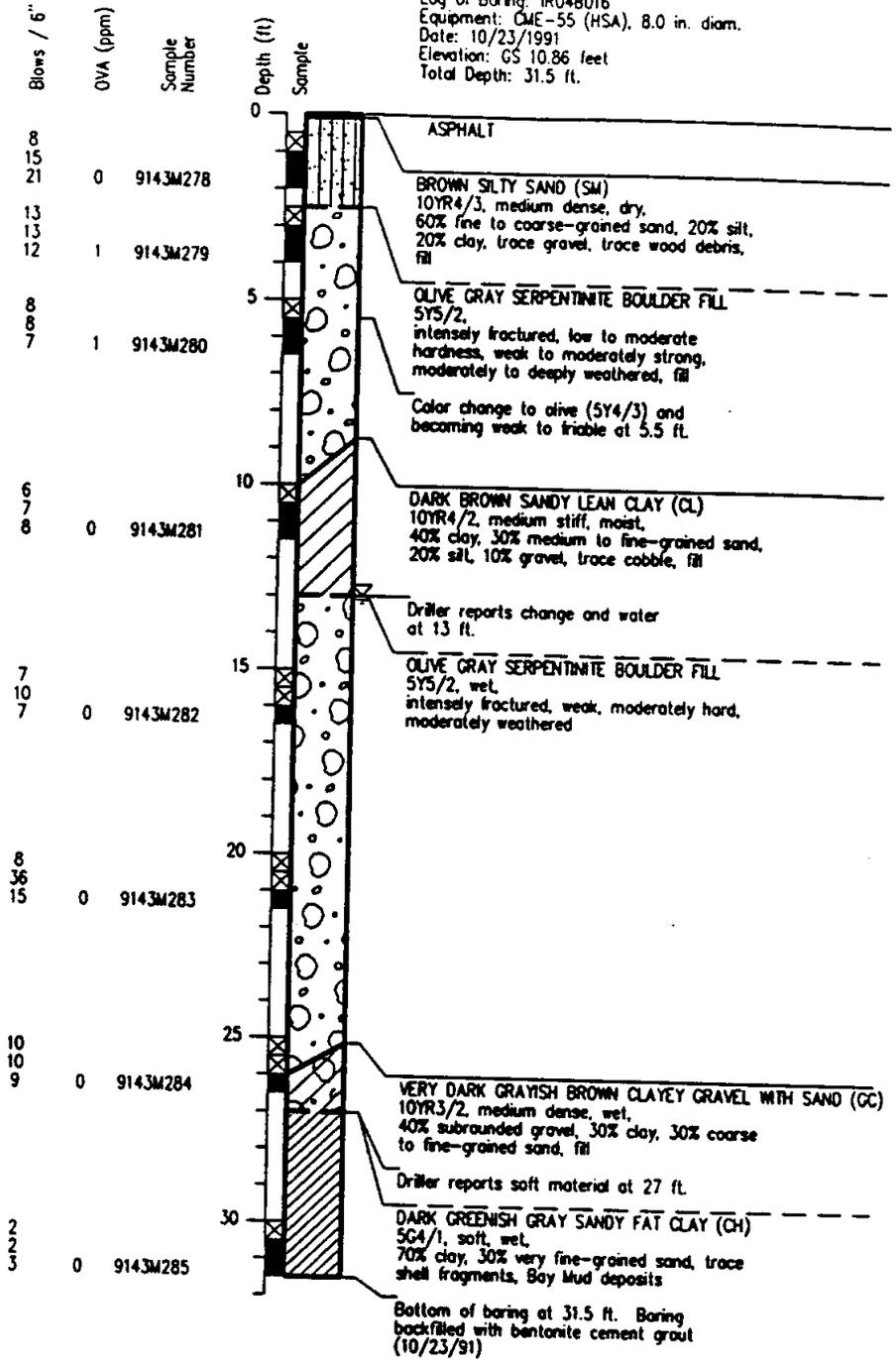
JOB NUMBER  
 18639,305.02

APPROVED

DATE  
 2/92

REVISED DATE

Log of Boring: IR048016  
 Equipment: CME-55 (HSA), 8.0 in. diam.  
 Date: 10/23/1991  
 Elevation: GS 10.86 feet  
 Total Depth: 31.5 ft.



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Log of Boring: IR048016  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
 CMM

JOB NUMBER  
 18639,305.02

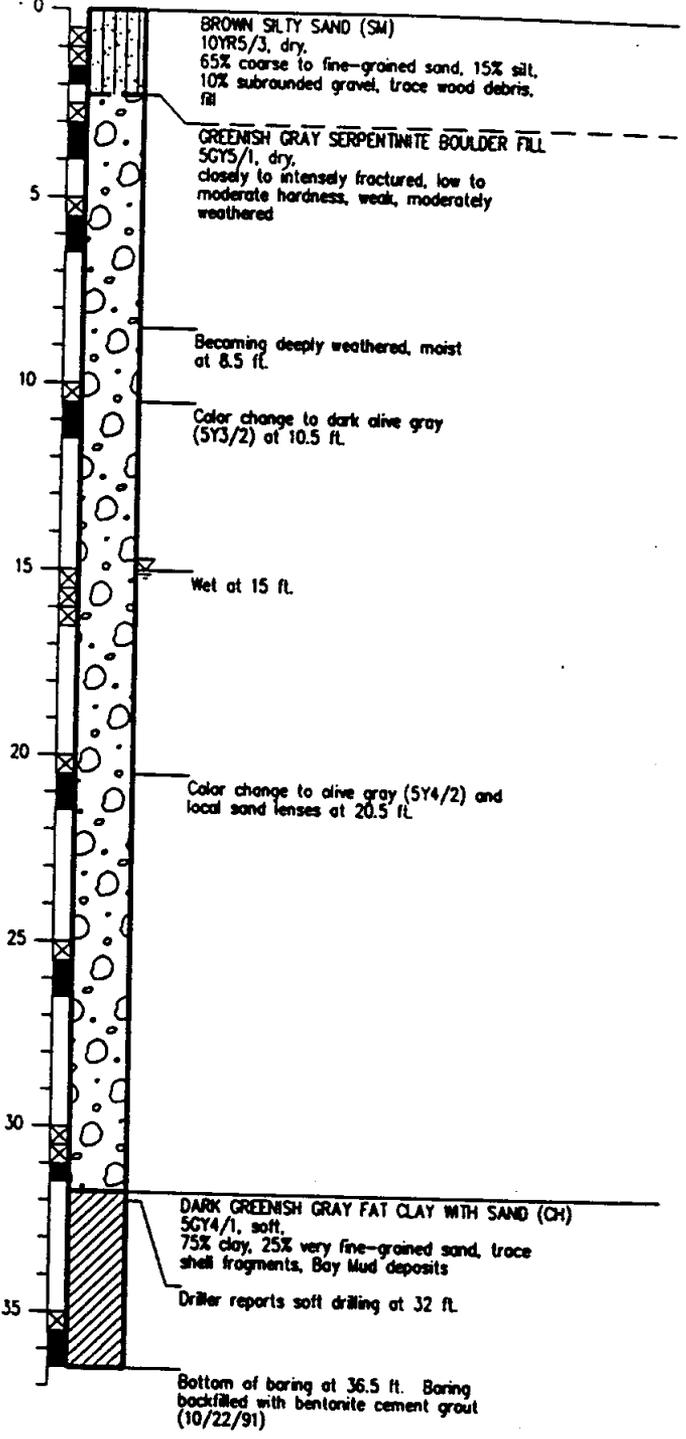
APPROVED

DATE  
 2/92

REVISED DATE

Log of Boring: IR048017  
 Equipment: CME-55 (HSA), 8.0 in. diam.  
 Date: 10/22/1991  
 Elevation: GS 11.98 feet  
 Total Depth: 36.5 ft.

Blows / 6"	OVA (ppm)	Sample Number	Depth (ft)	Sample
17 43 36	0	9143M270	0	
7 28 33	0	9143M271	5	
6 10 5	0	9143M272	10	
3 4 2	0	9143M273	15	
3 3 3			20	
4 10 12	0	9143M274	25	
4 5 10	0	9143M275	30	
12 5 7	0	9143M276	35	
1 2 1	0	9143M277	36.5	



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Log of Boring: IR048017  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
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PLATE

DRAWN  
 CMM

JOB NUMBER  
 18639,305.02

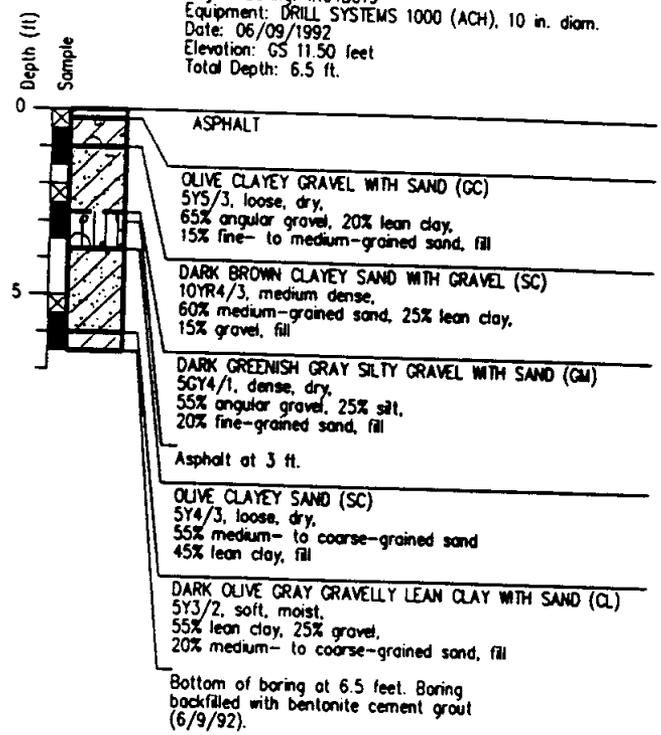
APPROVED

DATE  
 2/92

REVISED DATE

Log of Boring: IR04B019  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/09/1992  
 Elevation: GS 11.50 feet  
 Total Depth: 6.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
18		
28		
38	4	9224A276
33		
47		
32	1	9224A277
10		
15		
15	0	9224A278



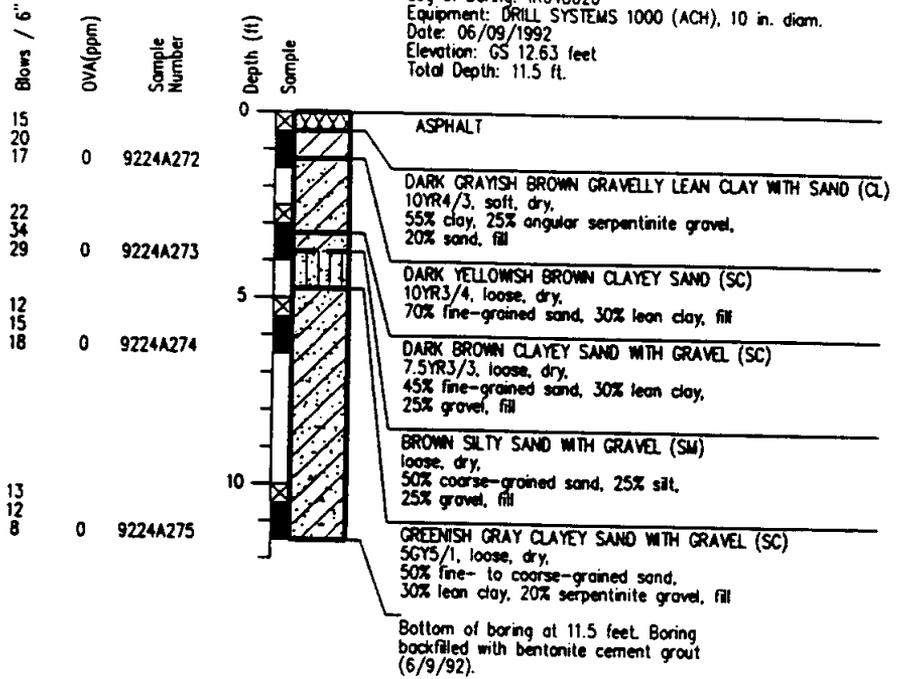
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 Environmental Services

Log of Boring IR04B019  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
WJF	11400 012402		9/92	

Log of Boring: IR04B020  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/09/1992  
 Elevation: GS 12.63 feet  
 Total Depth: 11.5 ft.



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Log of Boring IR04B020  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN  
WJF

JOB NUMBER  
11400 012402

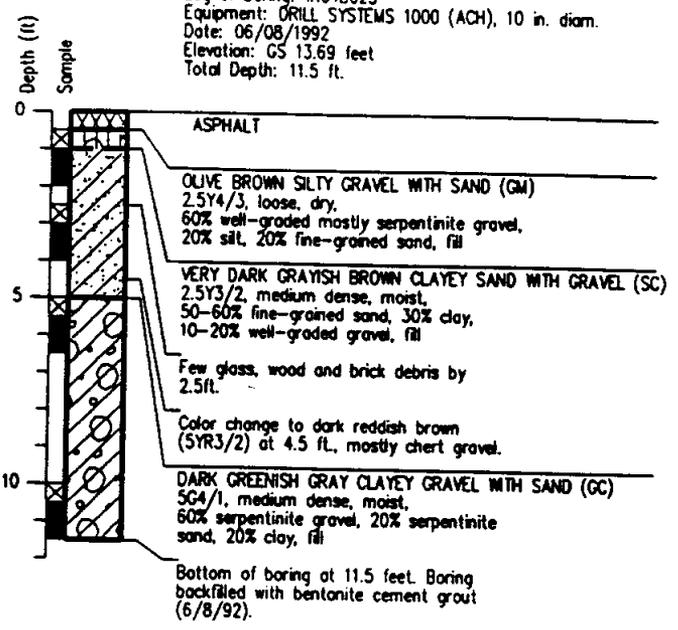
APPROVED

DATE  
9/92

REVISED DATE

Log of Boring: IR048025  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/08/1992  
 Elevation: GS 13.69 feet  
 Total Depth: 11.5 ft.

Blows / 6"	OVA (ppm)	Sample Number
7		
31		
33	0	9224H259
25		
33		
23	0	9224H260
7		
13		
4	0	9224H261
24		
11		
16	0	9224H262



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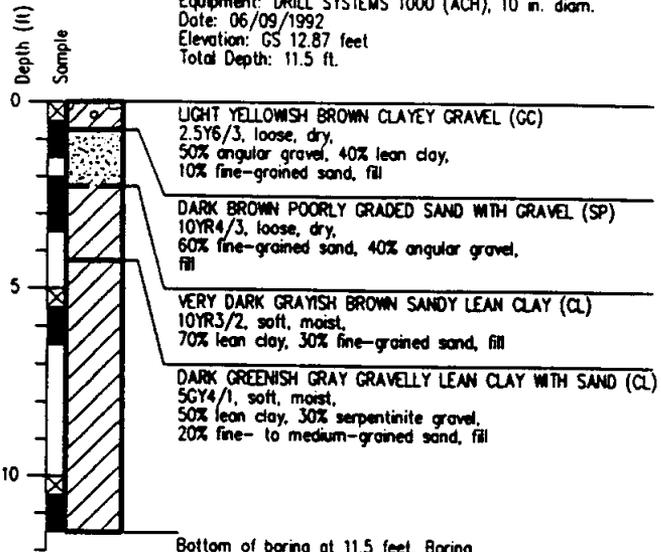
Log of Boring IR048025  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
W.J.F.	11400 012402		9/92	

Log of Boring: IR048026  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/09/1992  
 Elevation: GS 12.87 feet  
 Total Depth: 11.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
29		
17		
17	0	9224A268
17		
21		
20	1	9224A269
16		
15		
10	1	9224A270
7		
6		
13		9224A271



Bottom of boring at 11.5 feet. Boring backfilled with bentonite cement grout (6/9/92).



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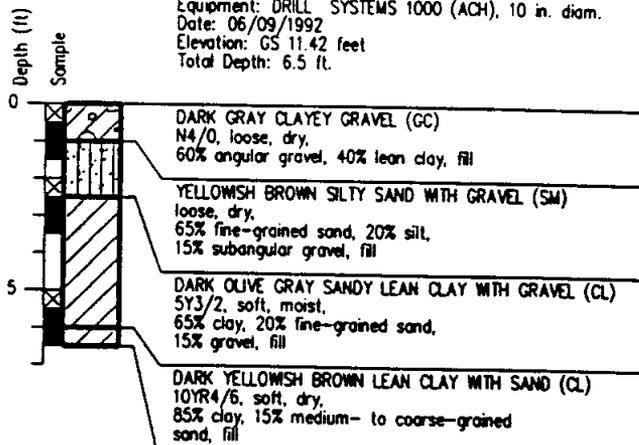
Log of Boring IR048026  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
WJF	11400 012402		9/92	

Log of Boring: IR04B028  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/09/1992  
 Elevation: GS 11.42 feet  
 Total Depth: 6.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
25		
20		
15	0	9224A279
8		
12		
9	0	9224A280
12		
13		
19	0	9224A281



Bottom of boring at 6.5 feet. Boring backfilled with bentonite cement grout (6/9/92).

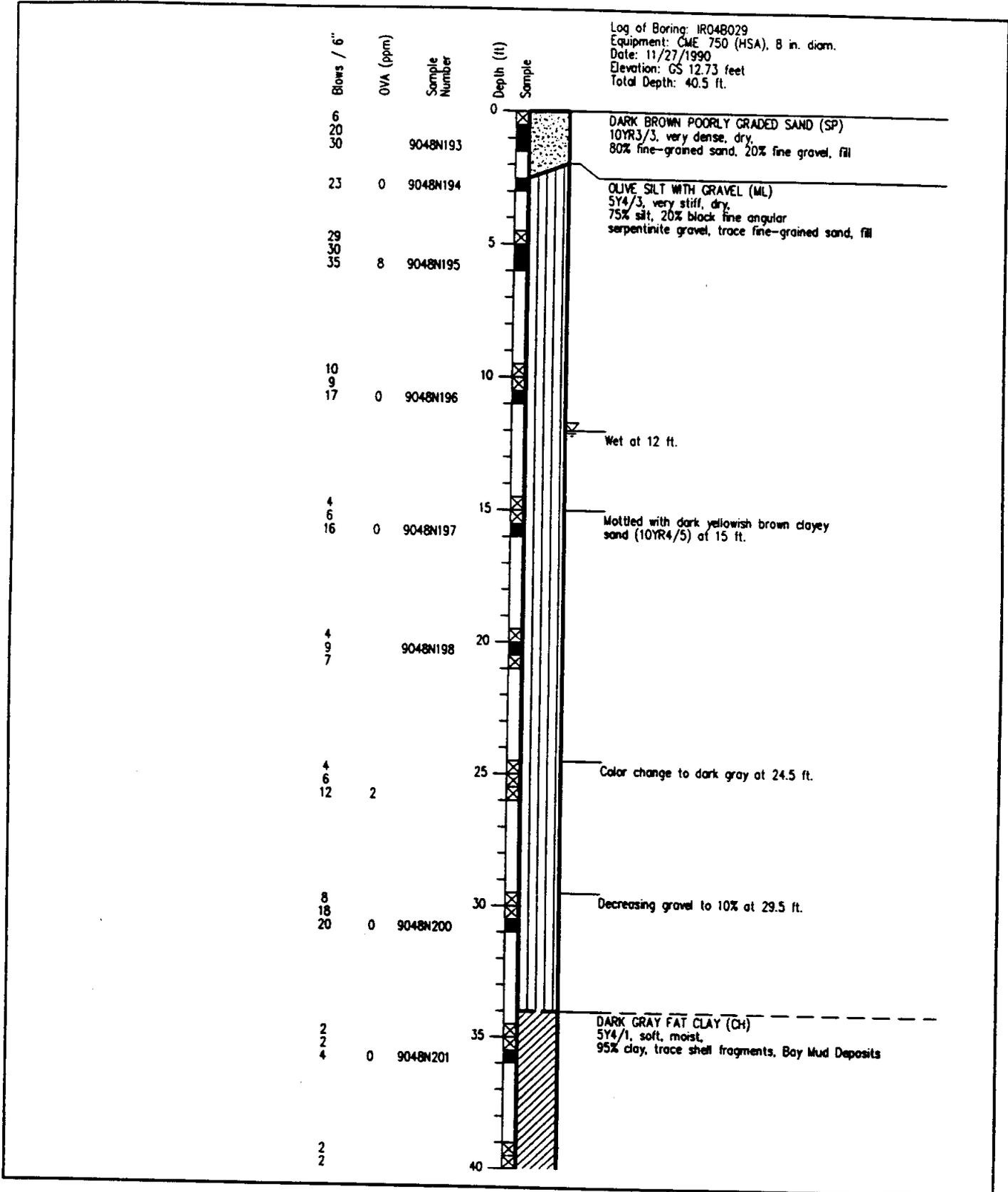


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Log of Boring IR04B028  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
W.J.F.	11400 01240Z		9/92	



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Log of Boring: IR048029  
 OU III RI REPORT  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
 JJF

JOB NUMBER  
 11400 012402

APPROVED

DATE  
 7/92

REVISED DATE

Blows / 6"  
0

OVA (ppm)  
0

Sample  
Number

Depth (ft)  
40

Sample

Log of Boring: IR048029 (p. 2)  
Equipment: CME 750 (HSA), 8" in. diam.  
Date: 11/27/1990  
Elevation: GS 12.73 feet  
Total Depth: 40.5 ft.

Bottom of boring at 40.5 feet. Boring  
backfilled with bentonite cement grout.  
(11/27/90)



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Environmental Services

Log of Boring: IR048029  
OU III RI REPORT  
Hunters Point Annex  
San Francisco, California

PLATE

DRAWN  
JJF

JOB NUMBER  
11400 012402

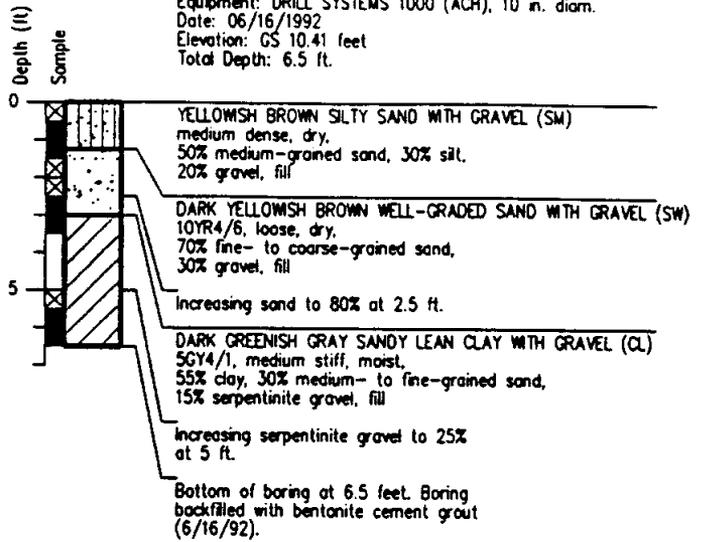
APPROVED

DATE  
7/92

REVISED DATE

Log of Boring: IR04B030  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/16/1992  
 Elevation: GS 10.41 feet  
 Total Depth: 6.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
37		
27		
37	2	9225A289
21		
30		
26		
28	0	9225A290
15		
20		
14	0	9225A291



YELLOWISH BROWN SILTY SAND WITH GRAVEL (SM)  
 medium dense, dry,  
 50% medium-grained sand, 30% silt,  
 20% gravel, fill

DARK YELLOWISH BROWN WELL-GRADED SAND WITH GRAVEL (SW)  
 10YR4/6, loose, dry,  
 70% fine- to coarse-grained sand,  
 30% gravel, fill

DARK GREENISH GRAY SANDY LEAN CLAY WITH GRAVEL (CL)  
 5GY4/1, medium stiff, moist,  
 55% clay, 30% medium- to fine-grained sand,  
 15% serpentinite gravel, fill

Increasing sand to 80% at 2.5 ft.

Increasing serpentinite gravel to 25% at 5 ft.

Bottom of boring at 6.5 feet. Boring backfilled with bentonite cement grout (6/16/92).



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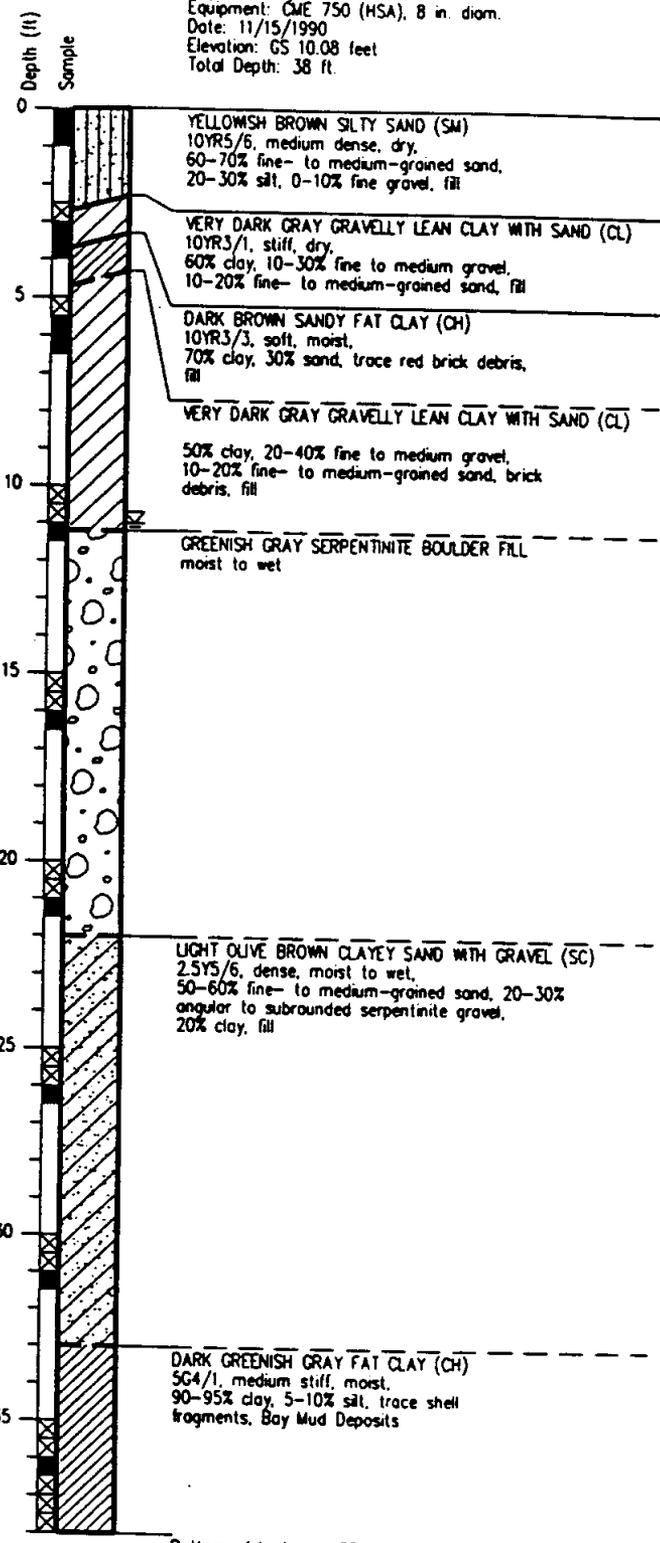
Log of Boring IR04B030  
 OU III RI Report  
 Hunters Point Annex  
 San Francisco, California  
 Draft Plot

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
WJF	11400 012402		9/92	

Log of Boring: IR04B033  
 Equipment: CME 750 (HSA), 8 in. diam.  
 Date: 11/15/1990  
 Elevation: GS 10.08 feet  
 Total Depth: 38 ft.

Blows / 6"	OVA (ppm)	Sample Number
28 50	0	9046H432
15 13 7	0	9046H433
4 10 12	0	9046H434
3 5 6	0	9046H435
20 25 20	0	9046H436
5 10 11	1	9046H440
6 9 11	0	9046H441
4 10 15	1	9046H442
2 4 6 3 3 2	5	9046H443



Bottom of boring at 38 feet. Boring backfilled with bentonite cement grout. (11/16/90)



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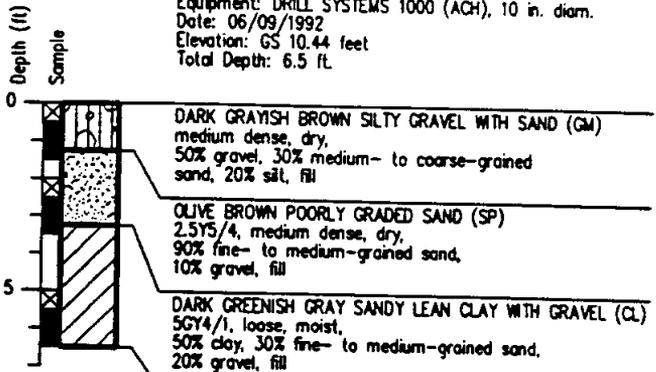
Log of Boring: IR04B033  
 OU III RI REPORT  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN JJF	JOB NUMBER 11400 012402	APPROVED	DATE 8/92	REVISED DATE
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Log of Boring: IR04B047  
 Equipment: DRILL SYSTEMS 1000 (ACH), 10 in. diam.  
 Date: 06/09/1992  
 Elevation: GS 10.44 feet  
 Total Depth: 6.5 ft.

Blows / 6"	OVA(ppm)	Sample Number
16		
22		
30	0	9224A282
16		
16		
18	0	9224A283
17		
21		
23	0	9224A284



Bottom of boring at 6.5 feet. Boring backfilled with bentonite cement grout (6/9/92).



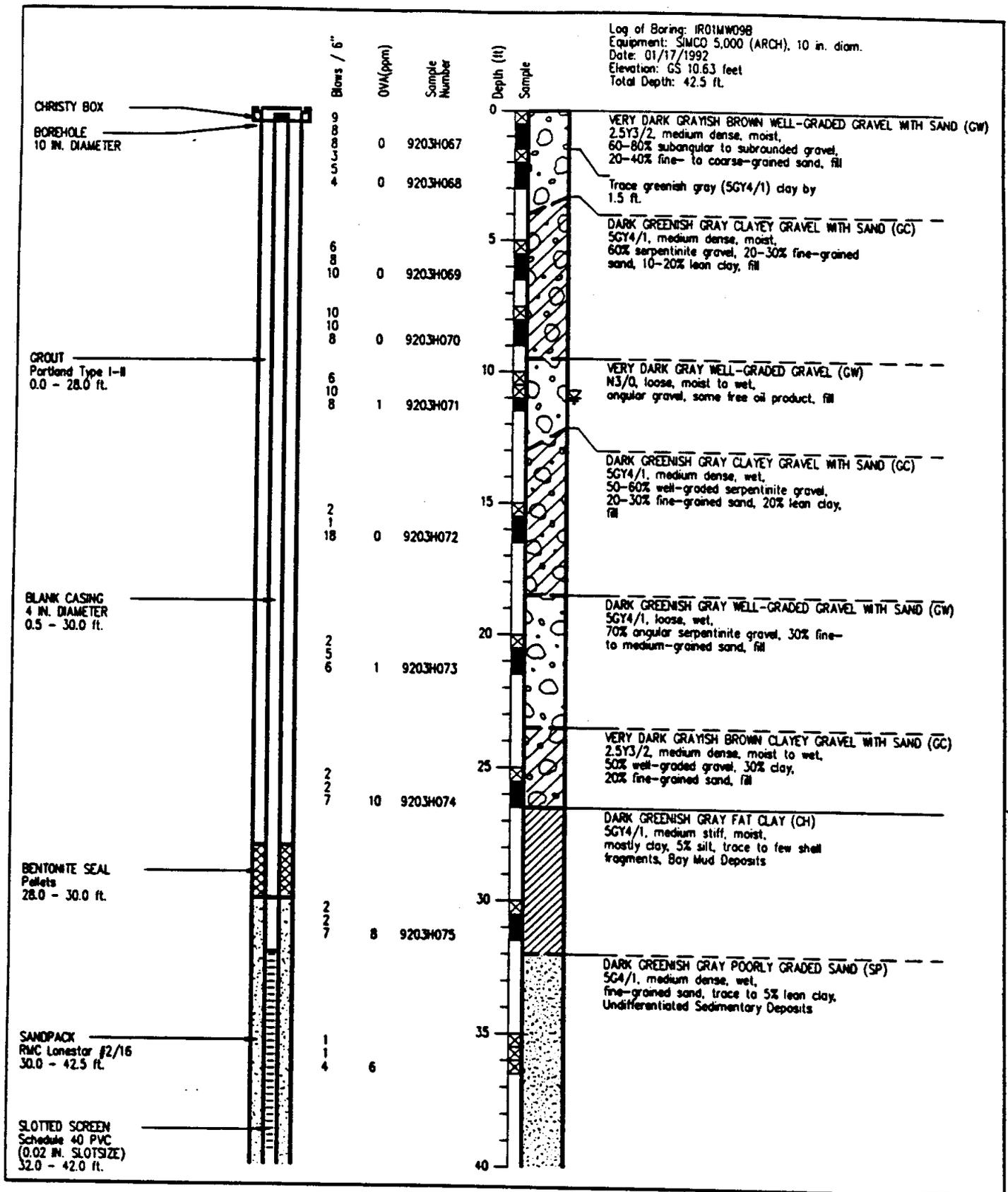
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Log of Boring IR04B047

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
WJF	11400 012402		10/92	



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Log of Boring IR01MW098 with Well Completion Detail

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

PLATE

DRAWN  
 MF

JOB NUMBER

APPROVED

DATE  
 11/09/92

REVISED DATE

Log of Boring: IR01MW09B (p. 2)  
 Equipment: SIMCO 5,000 (ARCH), 10 in. diam.  
 Date: 01/17/1992  
 Elevation: GS 10.63 feet  
 Total Depth: 42.5 ft.

Blows / 6"	OVA(ppm)	Sample Number	Depth (ft)	Sample
15				
32				
45	2	9203H076		

Color change to light olive brown (2.5YS/4) by 40 ft., loose to dense, moist to wet  
 Bottom of boring at 42.5 feet.



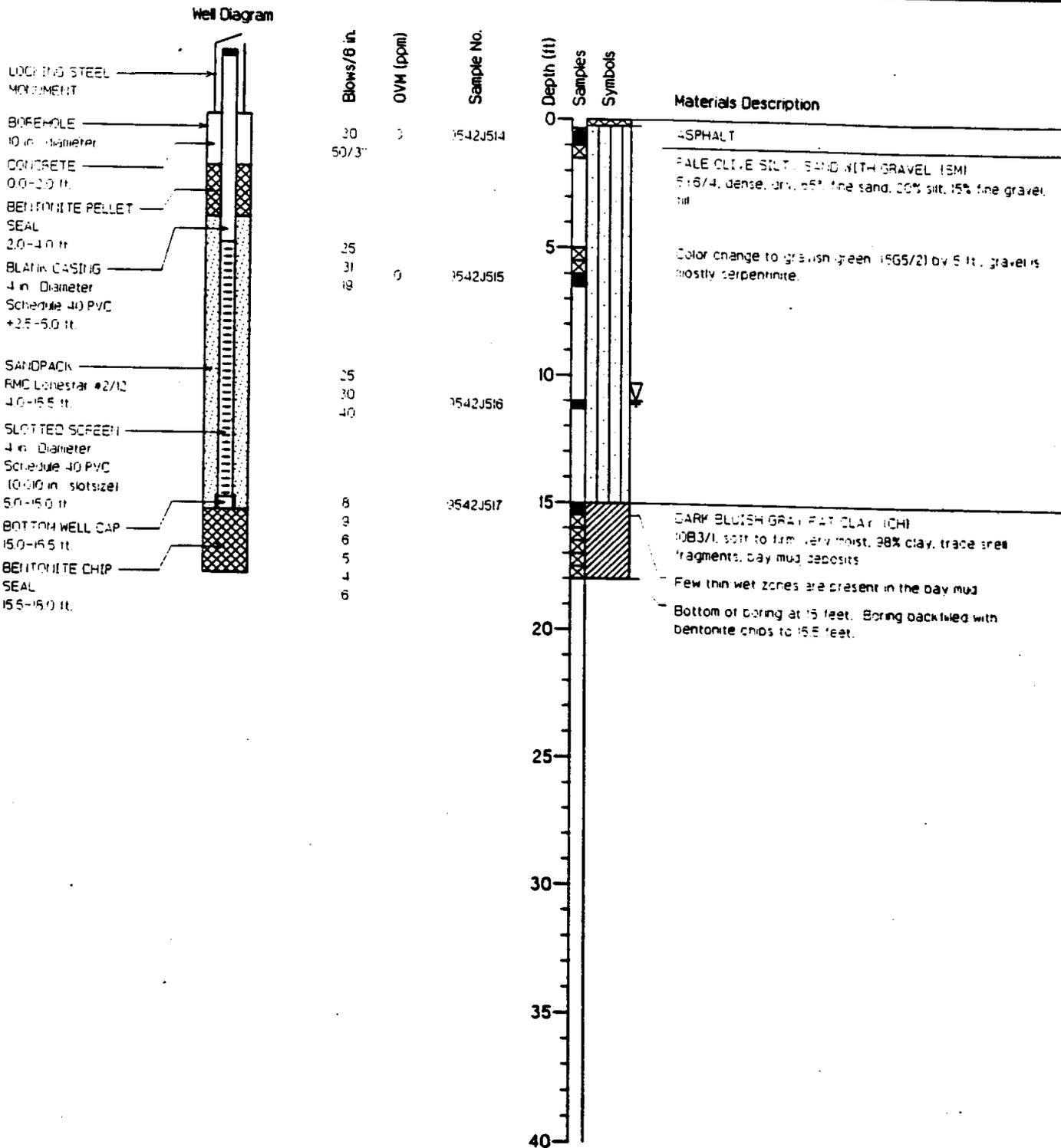
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Log of Boring IR01MW09B with Well Completion Detail

PLATE

HUNTER'S POINT ANNEX  
 SAN FRANCISCO, CA

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/09/92	



Project Number	CTO 005	Date Drilled	10/20/95	Figure
Project Name	Parcel E RI Report	GS Elevation	15.14 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	11 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	19 ft.	
Equipment	Air Casin Hammer Rod, 10 in. diam.			

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02  
 PROJECT NAME HPNS-Industrial Landfill Area  
 BY SK DATE 9/11/86

BORING NO. I02  
 PAGE 1 OF 2  
 SURFACE ELEV. \* 116.78'

PHOTO-VAC (ppm)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
		52		1	GC		CLAYEY GRAVEL-FILL; gray (5Y, 5/0); 10-15% low-plasticity fines; 25-30% fine to coarse sand; 55-65% fine and coarse gravel; medium dense to dense; damp.
		63		2	SC-CL		CLAYEY SAND TO SANDY CLAY-FILL; light olive brown (2.5Y, 5/4); 35-65% low-plasticity fines; 30-55% fine to coarse sand; 5-10% fine gravel; dense; damp.
		43		3	SW-SC		SAND TO CLAYEY SAND-FILL olive (5Y, 5/3); 5-10% low-plasticity fines; 80-90% fine to coarse sand; 5-10% fine to coarse gravel; dense; damp.
		16		4	SC		CLAYEY SAND-FILL; olive brown (2.5Y, 4/4); 15-40% low-plasticity fines; 50% fine to coarse sand; 10-20% fine and coarse gravel; medium dense; damp.
		26		5			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.
		21	v, s	6			CLAYEY SAND-FILL; dark gray (5Y, 4/1); 30-40% low-plasticity fines; 50-60% fine to coarse sand; 10% fine and coarse gravel; loose to medium dense; wet.
		18	v, s	7			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.
		17		8	GW		
		18		9			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.
		72		10			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.
		15		11			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.
		29		12	SC		CLAYEY SAND-FILL; dark gray (5Y, 4/1); 30-40% low-plasticity fines; 50-60% fine to coarse sand; 10% fine and coarse gravel; loose to medium dense; wet.
		18		13			SANDY GRAVEL-FILL; dark gray (5Y, 4/1); <5% low-plasticity fines; 15-20% fine to coarse sand; 75% fine and coarse gravel; loose to medium dense; wet.

**REMARKS**

Drilled with 8-inch hollow-stem auger; sampled with 2-inch I.D. California modified split-spoon sampler fitted with stainless steel liners. Boring was converted to a 2-inch ground-water monitoring well as detailed on Plate A14. \* Casing Elevation is relative to Navy datum.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 365-02.02

BORING NO. I02

PROJECT NAME HPNS-Industrial Landfill Area

PAGE 2 OF 2

BY SK DATE 9/11/86

SURFACE ELEV. \* 116.78'

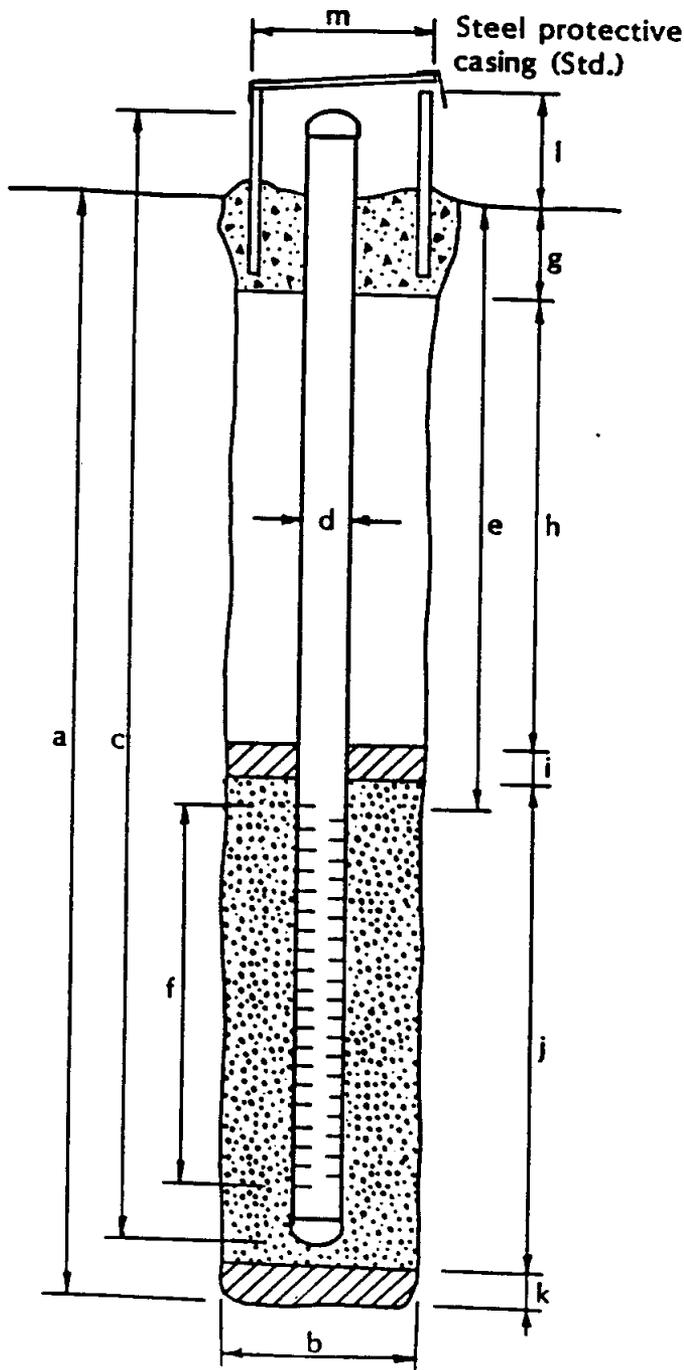
PHOTO-VAC (ppm)	POCKET PENETRO-METER (TSF)	PENETRA-TION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
				20		SC	CLAYEY SAND-FILL; continued. BOTTOM OF BORING AT 20.5 FEET.
				25			
				30			
				35			
				40			

REMARKS

# WELL DETAILS

PROJECT NUMBER 365-02.02BORING / WELL NO. 102PROJECT NAME HPNS-Industrial LandfillTOP OF CASING ELEV. 116.78'COUNTY San FranciscoGROUND SURFACE ELEV. 116'±

WELL PERMIT NO. \_\_\_\_\_

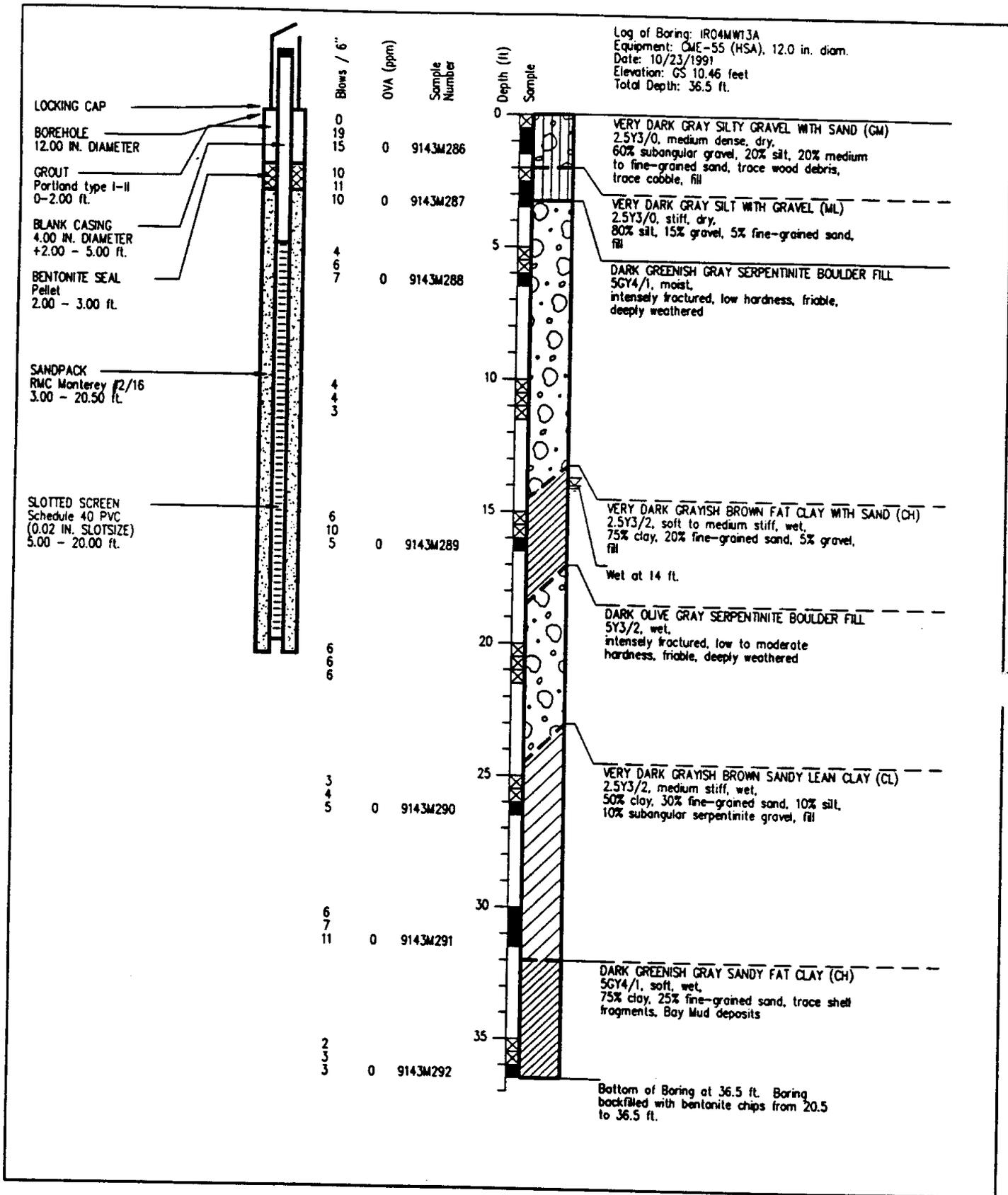
DATUM Navy

## EXPLORATORY BORING

- a. Total depth 20.5 ft.  
 b. Diameter 8 in.  
 Drilling method Hollow-stem auger

## WELL CONSTRUCTION

- c. Casing length 21 ft.  
 Material stainless steel  
 d. Diameter 2 in.  
 e. Depth to top perforations 5.5 ft.  
 f. Perforated length 15 ft.  
 Perforated interval from 20.5 to 5.5 ft.  
 Perforation type screen  
 Perforation size 0.010 inch  
 g. Surface seal (1 - 0') 1 ft.  
 Seal material cement-bentonite grout  
 h. Backfill (1.5 - 1') 0.5 ft.  
 Backfill material cement-bentonite grout  
 i. Seal (3 - 1.5') 1.5 ft.  
 Seal material bentonite  
 j. Gravel pack (20.5 - 3.5') 17 ft.  
 Pack material 12x20 sand  
 k. Bottom seal N/A ft.  
 Seal material N/A  
 l. Casing height 1 ft.  
 m. Protective casing diameter 10 in.



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Log of Boring and Well Completion Detail: IR04MW13A  
 Primary Phase Remedial Investigation  
 Naval Station, Treasure Island, Hunters Point Annex  
 San Francisco, California

PLATE

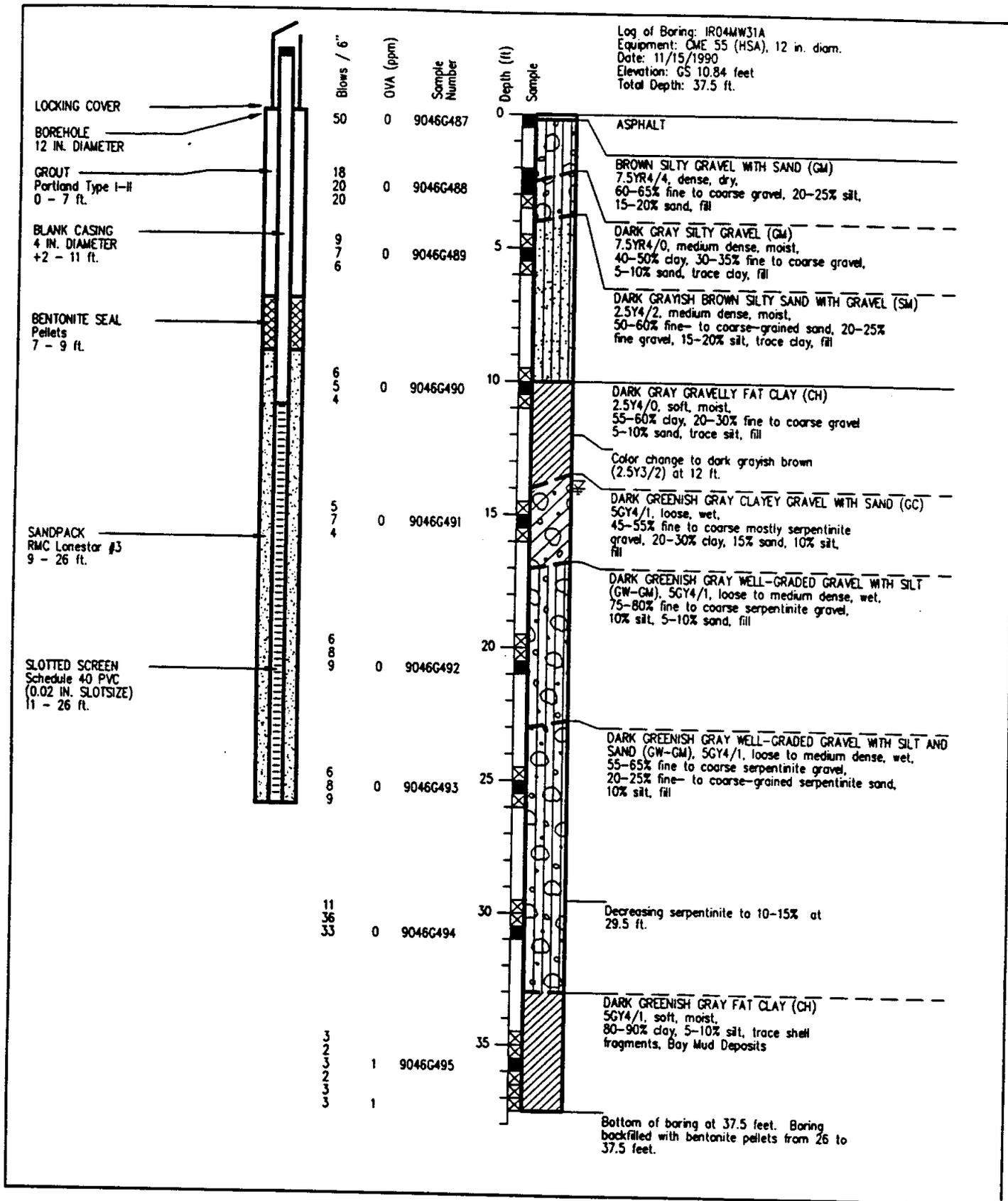
DRAWN  
 CMM

JOB NUMBER  
 18639,305.02

APPROVED

DATE  
 2/92

REVISED DATE



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 Environmental Services

Log of Boring and Well Completion Detail: IR04MW31A  
 OU III RI REPORT  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN  
JJF

JOB NUMBER  
11400 012402

APPROVED

DATE  
8/92

REVISED DATE

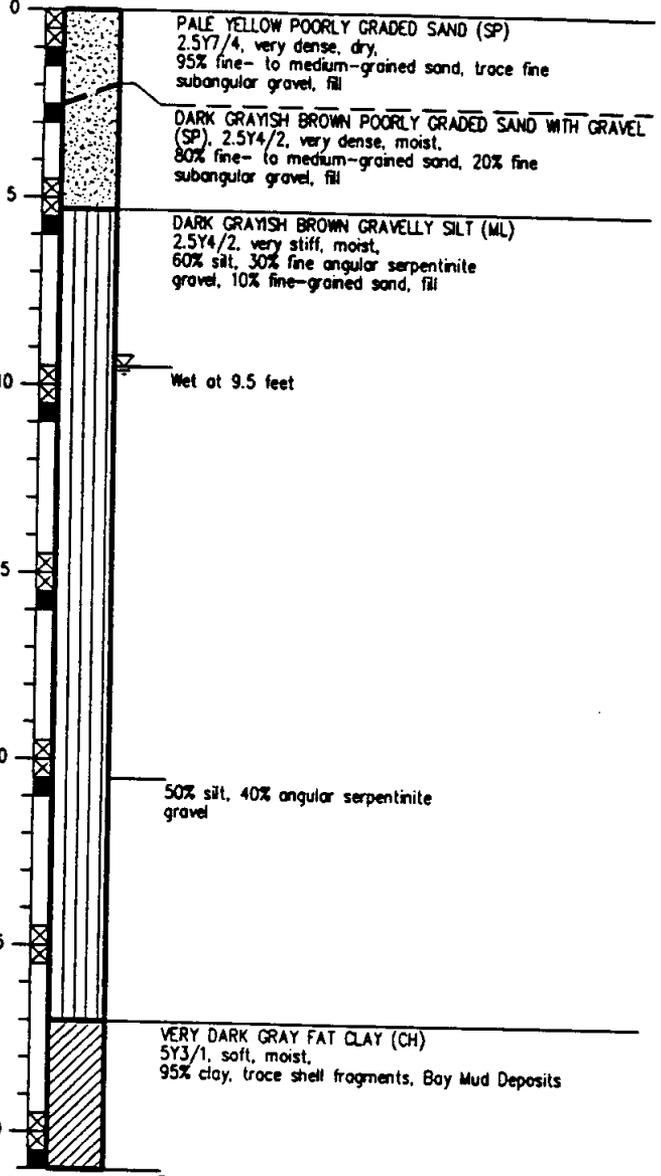
LOCKING COVER  
 BOREHOLE  
 12 IN. DIAMETER  
 GROUT  
 Portland Type I-II  
 0 - 4 ft.  
 BLANK CASING  
 4 IN. DIAMETER  
 +1.5 - 7 ft.  
 BENTONITE SEAL  
 Pellets  
 4 - 5 ft.

SANDPACK  
 RMC Lonestar #2/16  
 5 - 27 ft.

SLOTTED SCREEN  
 Schedule 40 PVC  
 (0.02 IN. SLOTSIZE)  
 7 - 27 ft.

Blows / 6"	OVA (ppm)	Sample Number
12		
30		
50	0	9048N186
50	0	9048N187
26		
25		
40		9048N188
9		
12		
12		9048N189
4		
9		
12	0	9048N190
5		
6		
7		9048N191
28		
50	0	
2		
2		
3	0	9048N192

Log of Boring: IR04MW35A  
 Equipment: CME 750 (HSA), 12 in. diam.  
 Date: 11/26/1990  
 Elevation: GS 11.28 feet  
 Total Depth: 31 ft.



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Log of Boring and Well Completion Detail: IR04MW35A  
 OU III RI REPORT  
 Hunters Point Annex  
 San Francisco, California

PLATE

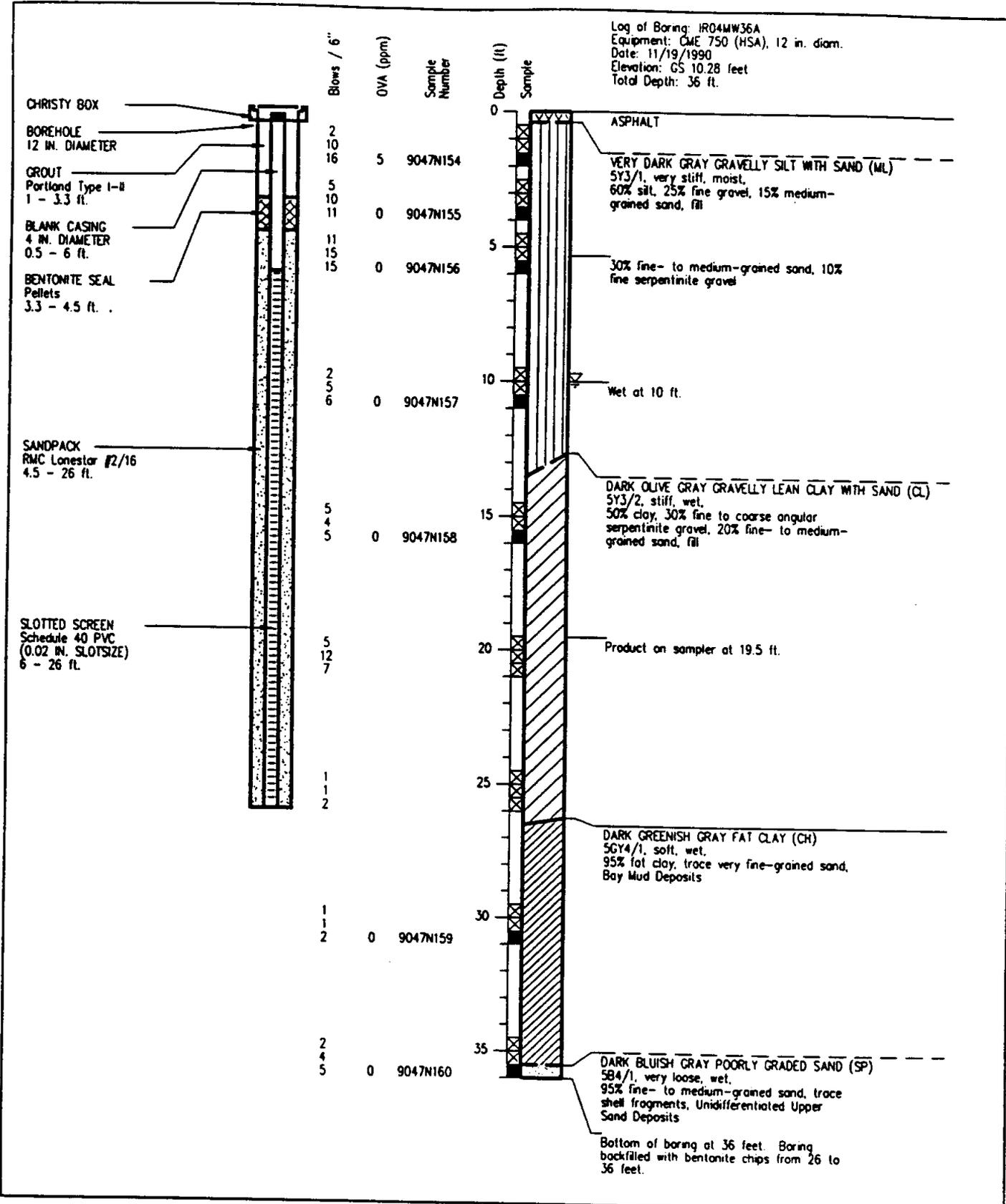
DRAWN  
 JJF

JOB NUMBER  
 11400 012402

APPROVED

DATE  
 8/92

REVISED DATE

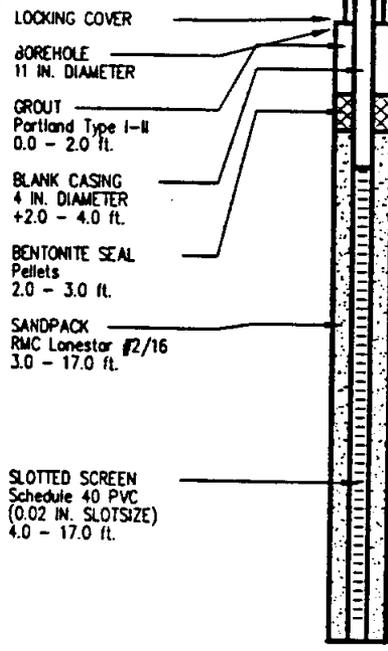


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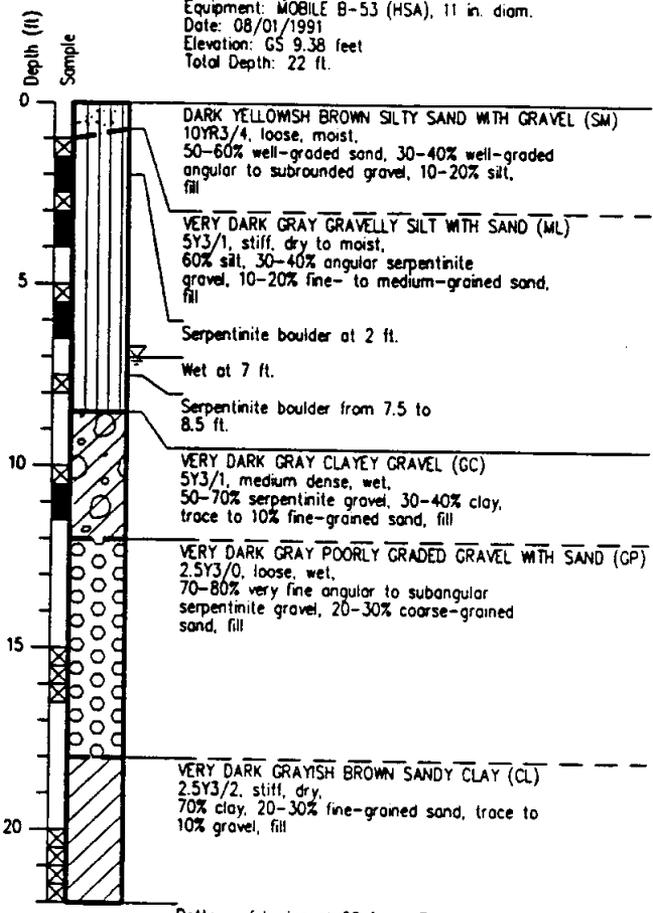
Log of Boring and Well Completion Detail: IR04MW36A  
 OU III RI REPORT  
 Hunters Point Annex  
 San Francisco, California

PLATE

Log of Boring: IR12MW11A  
 Equipment: MOBILE B-53 (HSA), 11 in. diam.  
 Date: 08/01/1991  
 Elevation: GS 9.38 feet  
 Total Depth: 22 ft.



Blows / 6"	OVA (ppm)	Sample Number
8		
14		
15	0	9131H770
4		
7		
8	0	9131H771
5		
10		
13	0	9131H772
50		
5		
7		
7	0	9131H773
4		
8		
10	0	
12		
10		
11		
12	0	



Bottom of boring at 22 feet. Boring backfilled with bentonite chips to 17 feet.



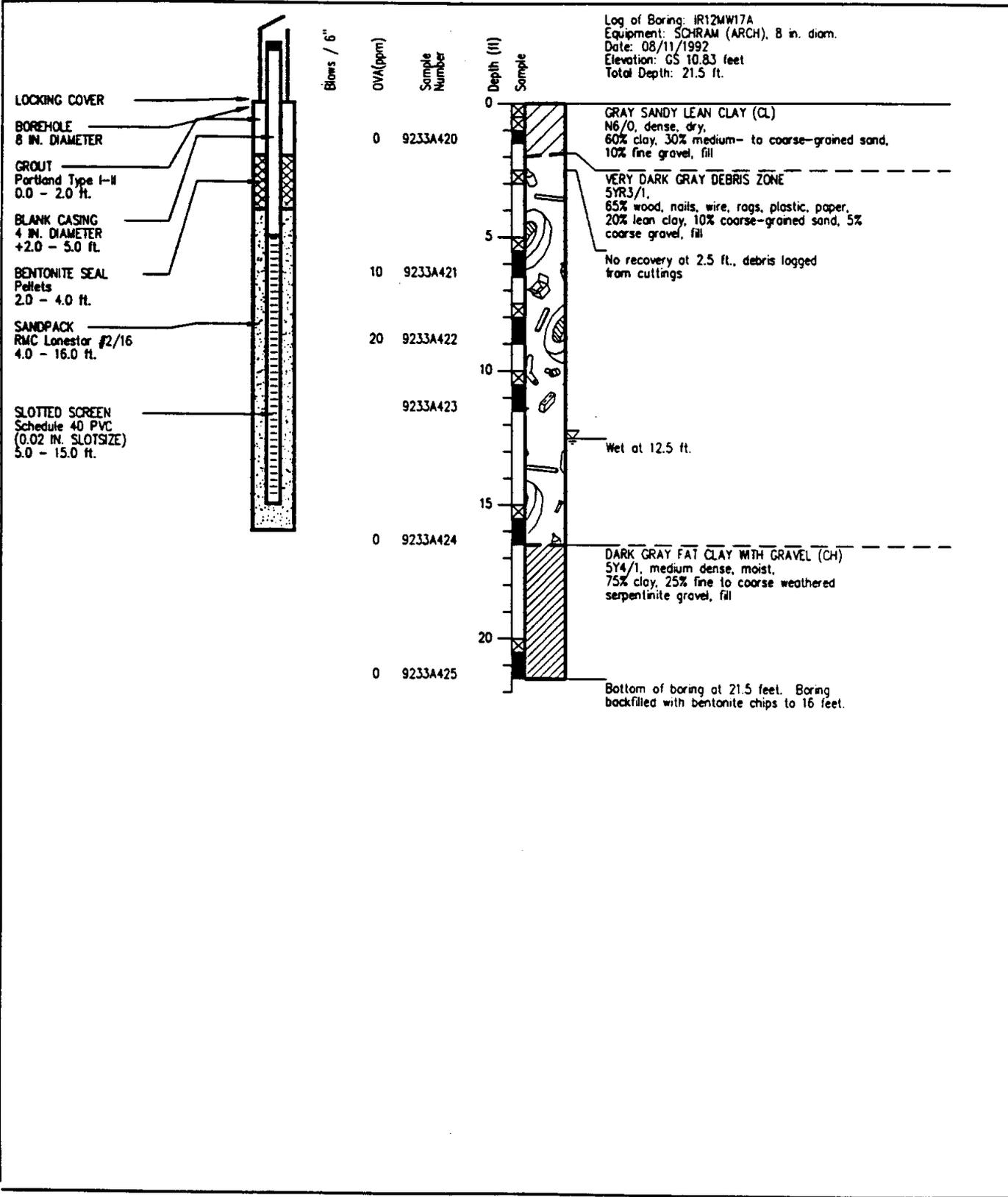
**Harding Lawson Associates**  
 Engineering and Environmental Services

Log of Boring IR12MW11A with Well Completion Detail

Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
MF			11/30/92	



Harding Lawson Associates  
 Engineering and  
 Environmental Services

Log of Boring IR12MW17A with Well Completion Detail  
 Naval Station, Treasure Island  
 Hunters Point Annex  
 San Francisco, California

PLATE

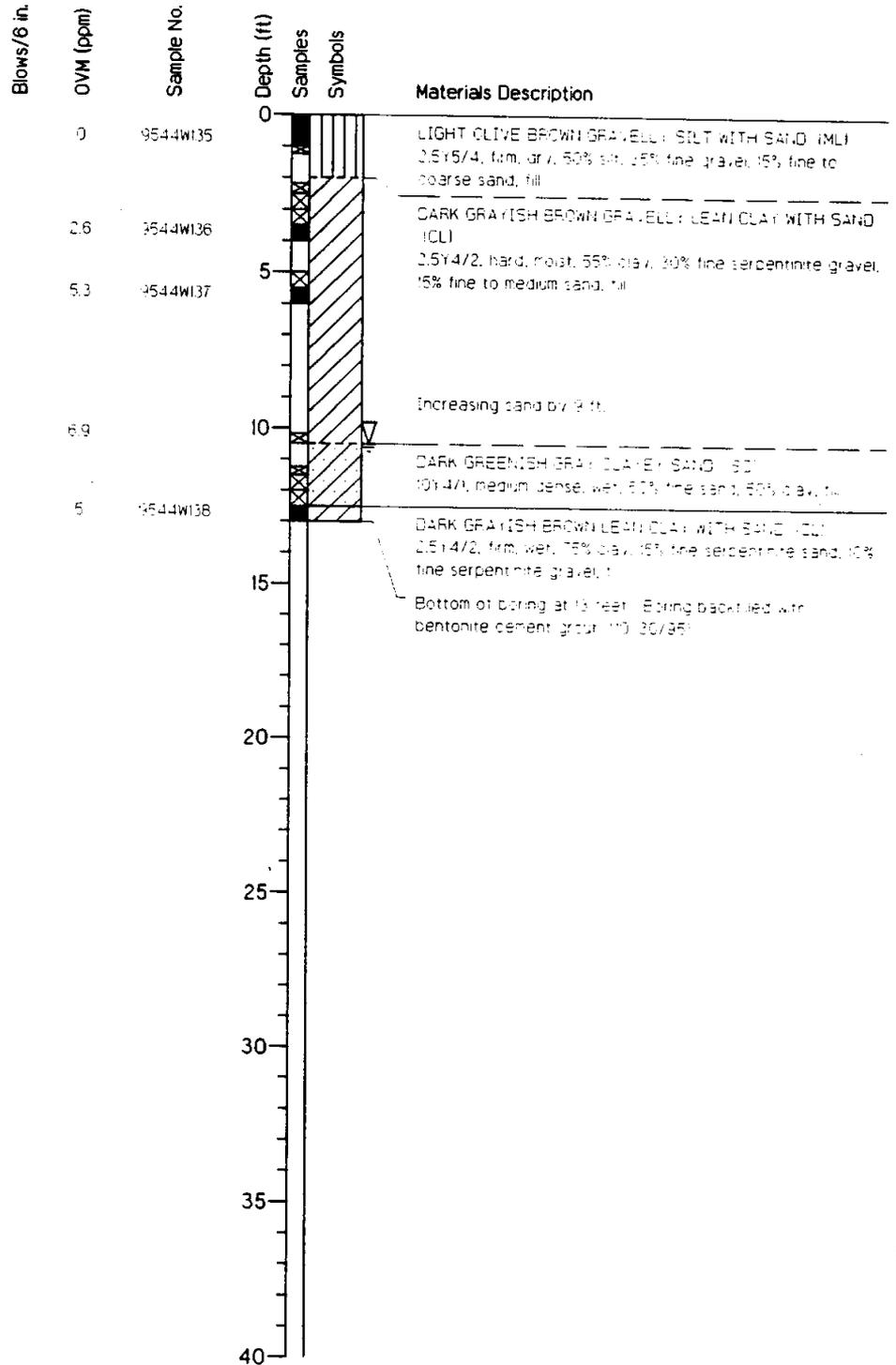
DRAWN  
 MF

JOB NUMBER

APPROVED

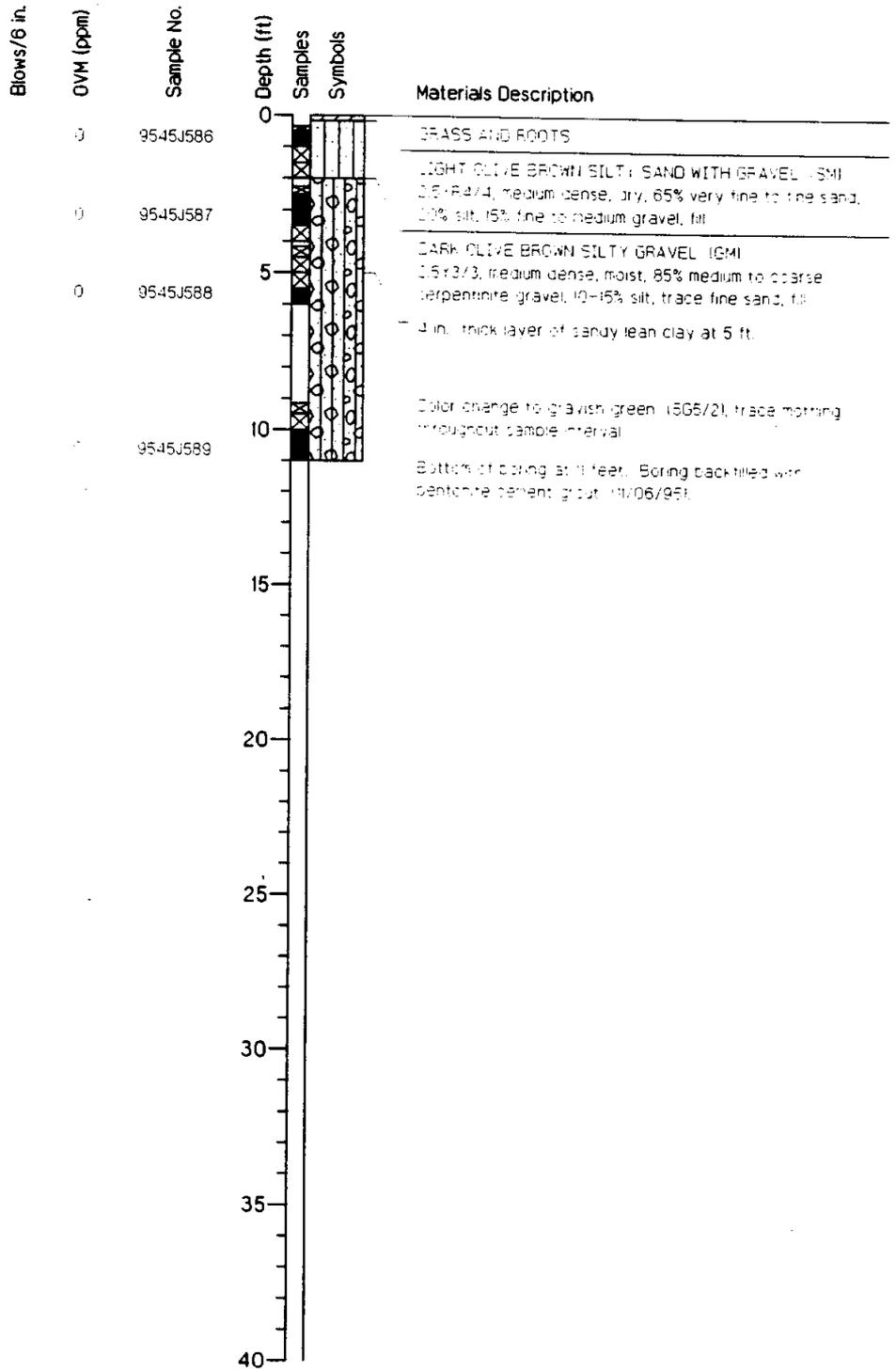
DATE  
 11/30/92

REVISED DATE



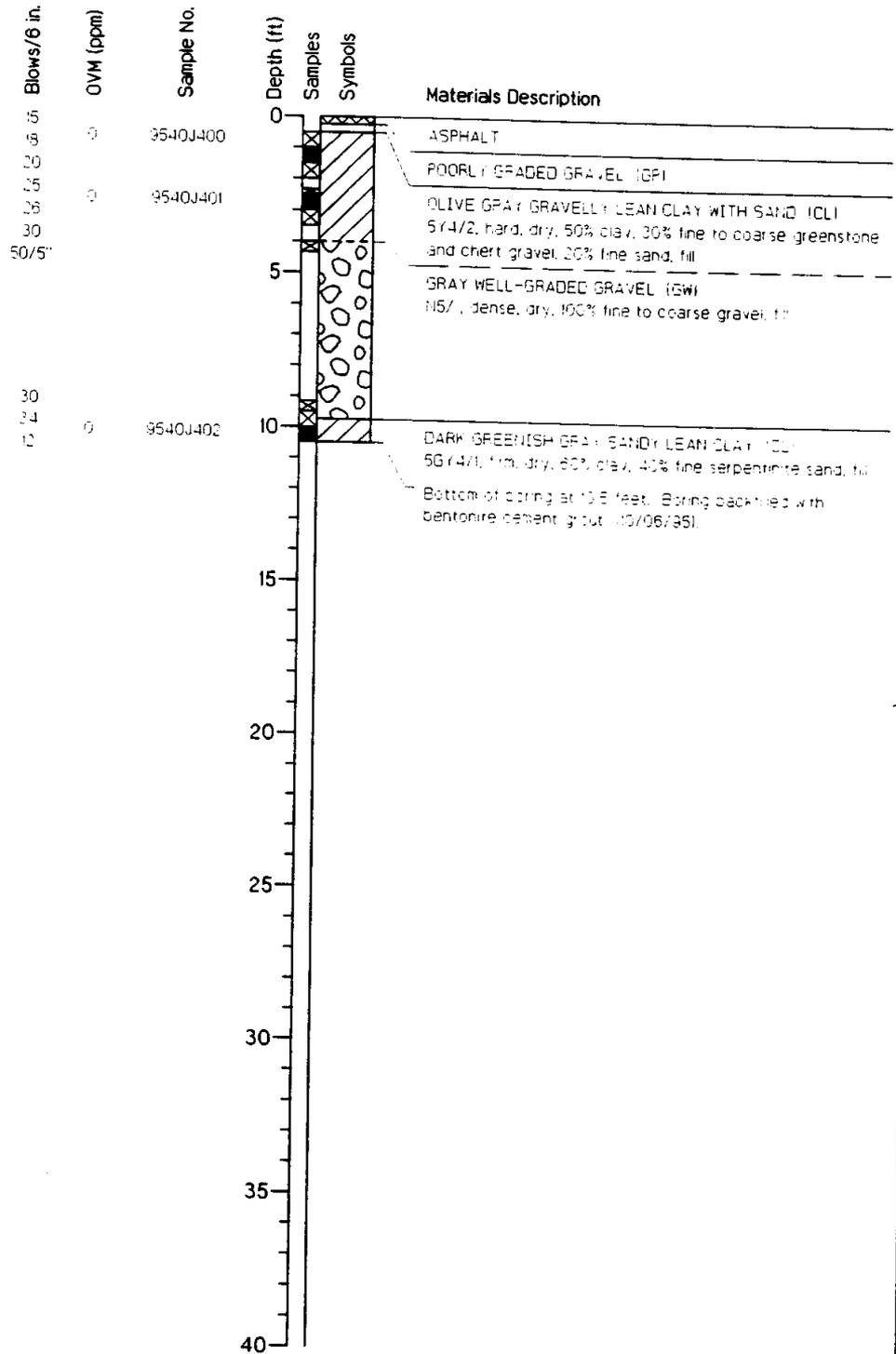
Project Number	CTO 005	Date Drilled	10/30/95
Project Name	Parcel E RI Report	GS Elevation	10.30 ft.
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	10.5 ft.
Project Location	San Francisco, California	Total Depth Of Borehole	13 ft.
Equipment	Simco Limited Access Rig (HSA), 4 in. diam.		

Figure



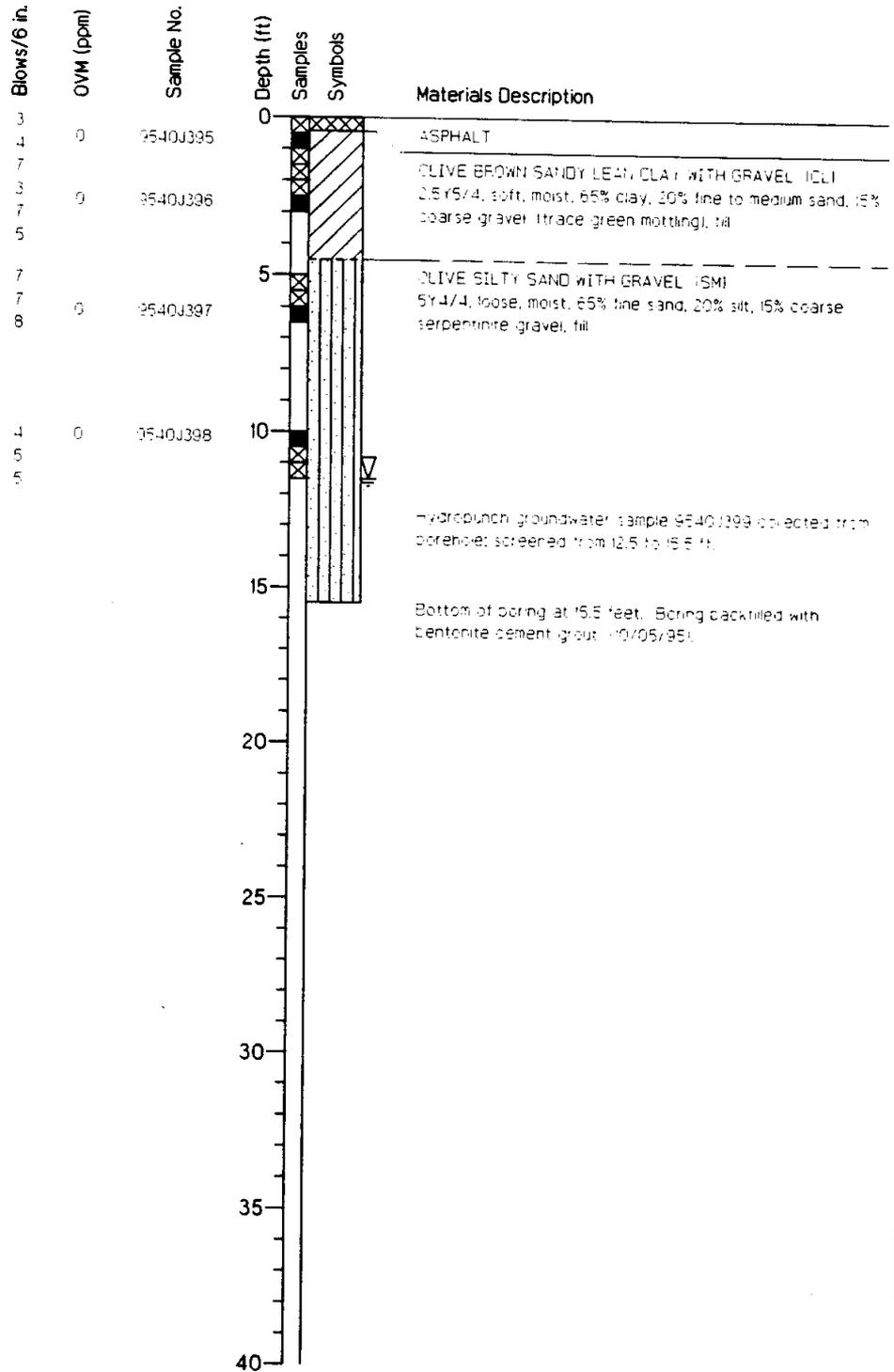
Project Number CTO 005 Date Drilled 11/06/95  
 Project Name Parcel E RI Report GS Elevation 10.70 ft.  
 Project Task Hunters Point Shipyard First Encountered Wet Soil None Encountered  
 Project Location San Francisco, California Total Depth Of Borehole 11 ft.  
 Equipment Simco Limited Access Rig (HSA), 4 in. diam.

Figure

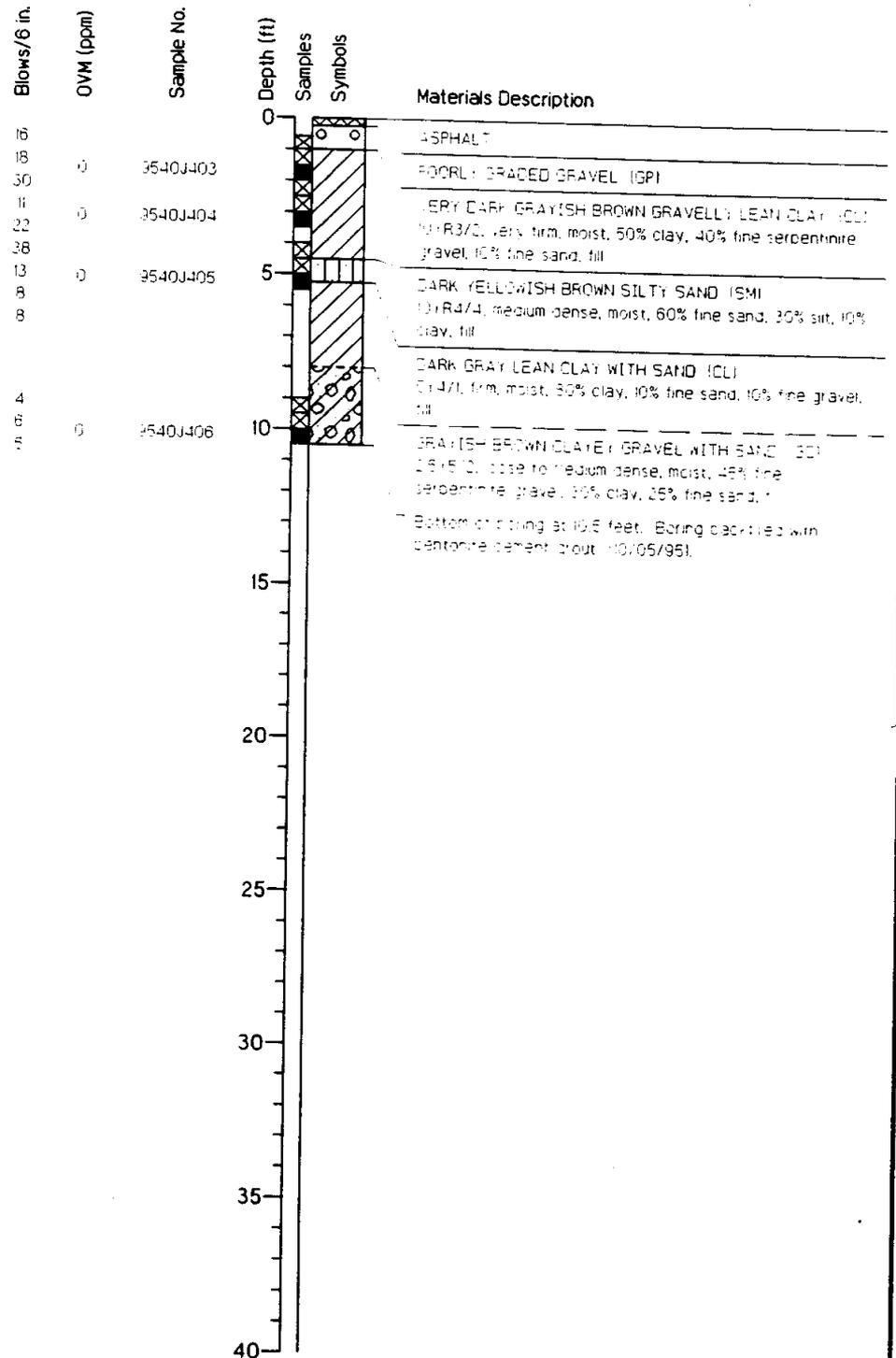


Project Number	CTO 005	Date Drilled	10/05/95
Project Name	Parcel E RI Report	GS Elevation	15.90 ft.
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	None Encountered
Project Location	San Francisco, California	Total Depth Of Borehole	10.5 ft.
Equipment	Air Casing Hammer Rig, 10 in. diam.		

Figure

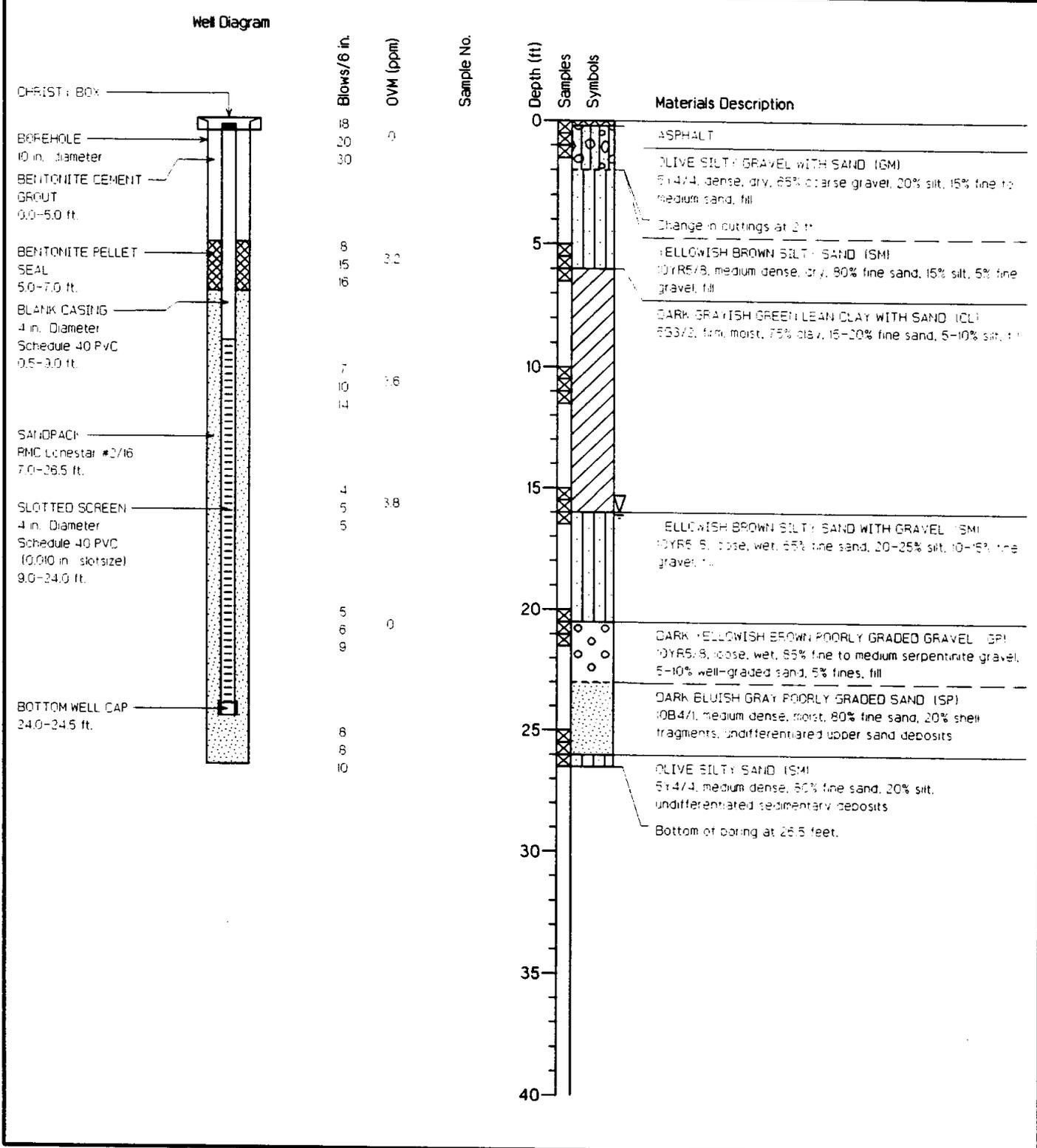


Project Number	CTO 005	Date Drilled	07/05/95	Figure
Project Name	Parcel E RI Report	GS Elevation	NA	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	11.5 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	15.5 ft.	
Equipment	Air Casing Hammer Rig, 10 in. diam.			



Project Number	CTO-005	Date Drilled	10/05/95
Project Name	Parcel E RI Report	GS Elevation	13.90 ft.
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	None Encountered
Project Location	San Francisco, California	Total Depth Of Borehole	10.5 ft.
Equipment	Air Casing Hammer Rig, 10 in. diam.		

Figure



Project Number	CTD 005	Date Drilled	07/11/98	Figure
Project Name	Parcel E RI Report	GS Elevation	10.04 ft.	
Project Task	Hunters Point Shipyard	First Encountered Wet Soil	18 ft.	
Project Location	San Francisco, California	Total Depth Of Borehole	26.5 ft.	
Equipment	E-61 Hollow Stem Auger Rig, 10 in. diam.			

**APPENDIX J2**  
**SOIL BORING LOGS FOR SDGI**

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## LIST OF BORING LOGS

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### IR-01/21

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IR01B366	IR01B380	IR01B394	IR01SH009	IR01SH021W	IR01SH033
IR01B367	IR01B381	IR01B395	IR01SH010	IR01SH022	IR01SH034
IR01B368	IR01B382	IR01B396	IR01SH011	IR01SH022E	IR01SH035
IR01B369	IR01B383	IR01B397	IR01SH012	IR01SH023	IR01SH036
IR01B370	IR01B384	IR01B398	IR01SH013	IR01SH024	IR01SH037
IR01B371	IR01B385	IR01B399	IR01SH014	IR01SH025	IR01SH038
IR01B372	IR01B386	IR01SH001	IR01SH015	IR01SH026	IR01SH039
IR01B373	IR01B387	IR01SH002	IR01SH016	IR01SH027	IR01SH040
IR01B374	IR01B388	IR01SH003	IR01SH017	IR01SH028	IR01SH040S
IR01B375	IR01B389	IR01SH004	IR01SH018	IR01SH028E	IR01SH040W
IR01B376	IR01B390	IR01SH005	IR01SH019	IR01SH029	IR01SH041
IR01B377	IR01B391	IR01SH006	IR01SH020	IR01SH030	IR01SH041N
IR01B378	IR01B392	IR01SH007	IR01SH021	IR01SH031	IR01SH041S
IR01B379	IR01B393	IR01SH008	IR01SH021S	IR01SH032	IR01SH042

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### IR-02

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IR02B386	IR02B421	IR02B455	IR02B490	IR02B524	IR02SH030
IR02B387	IR02B422	IR02B456	IR02B491	IR02B525	IR02SH031
IR02B388	IR02B423	IR02B457	IR02B492	IR02B526	IR02SH032
IR02B389	IR02B424	IR02B458	IR02B493	IR02B527	IR02SH033
IR02B390	IR02B425	IR02B459	IR02B494	IR02SH001	IR02SH034
IR02B391	IR02B426	IR02B460	IR02B495	IR02SH002	IR02SH035
IR02B392	IR02B427	IR02B461	IR02B496	IR02SH003	IR02SH036
IR02B393	IR02B428	IR02B462	IR02B497	IR02SH004	IR02SH037
IR02B394	IR02B429	IR02B463	IR02B498	IR02SH004E	IR02SH038
IR02B396	IR02B430	IR02B464	IR02B499	IR02SH004N	IR02SH039
IR02B397	IR02B431	IR02B465	IR02B500	IR02SH004W	IR02SH040
IR02B398	IR02B432	IR02B467	IR02B501	IR02SH005	IR02SH041
IR02B399	IR02B433	IR02B468	IR02B502	IR02SH006	IR02SH041A
IR02B400	IR02B434	IR02B469	IR02B503	IR02SH008	IR02SH042
IR02B401	IR02B435	IR02B470	IR02B504	IR02SH010	IR02SH043
IR02B402	IR02B436	IR02B471	IR02B505	IR02SH011	IR02SH044
IR02B403	IR02B437	IR02B472	IR02B506	IR02SH012	IR02SH045
IR02B404	IR02B438	IR02B473	IR02B507	IR02SH013	IR02SH046
IR02B405	IR02B439	IR02B474	IR02B508	IR02SH014	IR02SH047
IR02B406	IR02B440	IR02B475	IR02B509	IR02SH015	IR02SH048
IR02B407	IR02B441	IR02B476	IR02B510	IR02SH016	IR02SH049
IR02B408	IR02B442	IR02B477	IR02B511	IR02SH017	IR02SH050
IR02B409	IR02B443	IR02B478	IR02B512	IR02SH018	IR02SH051

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## LIST OF BORING LOGS (Continued)

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### IR-02 (Continued)

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IR02B410	IR02B444	IR02B479	IR02B513	IR02SH019	IR02SH052
IR02B411	IR02B445	IR02B480	IR02B514	IR02SH020	IR03B342
IR02B412	IR02B446	IR02B481	IR02B515	IR02SH021	IR03B343
IR02B413	IR02B447	IR02B482	IR02B516	IR02SH022	IR03B344
IR02B414	IR02B448	IR02B483	IR02B517	IR02SH023	IR03B345
IR02B415	IR02B449	IR02B484	IR02B518	IR02SH024	
IR02B416	IR02B450	IR02B485	IR02B519	IR02SH025	
IR02B417	IR02B451	IR02B486	IR02B520	IR02SH026	
IR02B418	IR02B452	IR02B487	IR02B521	IR02SH027	
IR02B419	IR02B453	IR02B488	IR02B522	IR02SH028	
IR02B420	IR02B454	IR02B489	IR02B523	IR02SH029	

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### IR-03

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IR03B346	IR03B355	IR03B363	IR03B371	IR03SH001	IR03SH008
IR03B347	IR03B356	IR03B364	IR03B372	IR03SH002	IR03SH008E
IR03B348	IR03B357	IR03B365	IR03B373	IR03SH003	IR03SH008S
IR03B349	IR03B358	IR03B366	IR03B374	IR03SH004	IR03SH008W
IR03B350	IR03B359	IR03B367	IR03B375	IR03SH005	IR03SH009
IR03B351	IR03B360	IR03B368	IR03B376	IR03SH005W	IR03SH010
IR03B352	IR03B361	IR03B369	IR03B377	IR03SH006	IR03SH011
IR03B353	IR03B362	IR03B370	IR03B378	IR03SH007	IR03SH012
IR03B354					

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### IR-04

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IR04B048  
IR04B049

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### IR-05

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IR05B088	IR05B094	IR05B097	IR05B100	IR05B102	IR05B105
IR05B089	IR05B095	IR05B098	IR05B101	IR05B104	IR05B106
IR05B090	IR05B096	IR05B099			

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### IR-11

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IR11B039	IR11B041	IR11B043	IR11B045	IR11B046	
IR11B040	IR11B042	IR11B044			

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### IR-12

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IR12B024	IR12B028	IR12B031	IR12B034	IR12B037	IR12B040
IR12B025	IR12B029	IR12B032	IR12B035	IR12B038	IR12B041
IR12B026	IR12B030	IR12B033	IR12B036	IR12B039	IR12B042
IR12B027					

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## LIST OF BORING LOGS (Continued)

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### IR-13

IR13B010	IR13B013	IR13B016	IR13B019	IR13B022	IR39B043
IR13B011	IR13B014	IR13B017	IR13B020	IR13B023	IR39B044
IR13B012	IR13B015	IR13B018	IR13B021	IR39B042	

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### IR-14

IR14B013	IR14B024	IR14B035	IR14B045	IR14B055	IR14B065
IR14B014	IR14B025	IR14B036	IR14B046	IR14B056	IR14B066
IR14B015	IR14B026	IR14B037	IR14B047	IR14B057	IR14B067
IR14B016	IR14B027	IR14B038	IR14B048	IR14B058	IR14B068
IR14B017	IR14B028	IR14B039	IR14B049	IR14B059	IR14B069
IR14B018	IR14B029	IR14B040	IR14B050	IR14B060	IR14B070
IR14B019	IR14B030	IR14B041	IR14B051	IR14B061	IR14B071
IR14B020	IR14B031	IR14B042	IR14B052	IR14B062	IR14B072
IR14B021	IR14B033	IR14B043	IR14B053	IR14B063	IR14B073
IR14B022	IR14B034	IR14B044	IR14B054	IR14B064	IR14B074

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### IR-15

IR15B019	IR15B023	IR15B027	IR15B031	IR15B035	IR15B039
IR15B020	IR15B024	IR15B028	IR15B032	IR15B036	IR15B040
IR15B021	IR15B025	IR15B029	IR15B033	IR15B037	IR15B041
IR15B022	IR15B026	IR15B030	IR15B034	IR15B038	IR15B042

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### IR-36

IR36B148	IR36B165	IR36B178	IR36B191	IR36B204	IR36B217
IR36B149	IR36B166	IR36B179	IR36B192	IR36B205	IR36B218
IR36B150	IR36B167	IR36B180	IR36B193	IR36B206	IR36B219
IR36B151	IR36B168	IR36B181	IR36B194	IR36B207	IR36B220
IR36B152	IR36B169	IR36B182	IR36B195	IR36B208	IR36B221
IR36B153	IR36B170	IR36B183	IR36B196	IR36B209	IR36B222
IR36B154	IR36B171	IR36B184	IR36B197	IR36B210	IR36B223
IR36B159	IR36B172	IR36B185	IR36B198	IR36B211	IR36B224
IR36B160	IR36B173	IR36B186	IR36B199	IR36B212	IR36B225
IR36B161	IR36B174	IR36B187	IR36B200	IR36B213	IR36B226
IR36B162	IR36B175	IR36B188	IR36B201	IR36B214	IR36B227
IR36B163	IR36B176	IR36B189	IR36B202	IR36B215	IR36B229
IR36B164	IR36B177	IR36B190	IR36B203	IR36B216	

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### IR-38

IR38B008	IR38B011				
IR38B010	IR38B012				

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## LIST OF BORING LOGS (Continued)

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**IR-39**

IR39B045	IR39B047	IR39B049	IR39B051	IR39B053	IR39B055
IR39B046	IR39B048	IR39B050	IR39B052	IR39B054	IR39B056

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**IR-56**

IR56B039	IR56B041	IR56B043	IR56B045	IR56B047	IR56B049
IR56B040	IR56B042	IR56B044	IR56B046	IR56B048	IR56B050

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**IR-72**

IR72B041

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**IR-73**

IR73B023	IR73B026	IR73B028	IR73B030	IR73B032	IR73B034
IR73B024	IR73B027	IR73B029	IR73B031	IR73B033	IR73B035
IR73B025					

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**IR-01/21 BORING LOGS**

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**Tetra Tech EM Inc.**

**Log of Boring: IR01B366**

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 6.58

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1			IR01B366020								SANDY LEAN CLAY: light gray (10YR 7/1); moist; soft; 90% clay; 10% fine to medium sand; trace coarse gravel at 4 feet; becomes saturated below 4.75 feet; color changes to black (N 2.5) at 5.75 feet
2	48		IR01B366100	0	0	6-7	250-350			CL	
3											
4				26	0	6-7	250-350				Poorly graded SANDY GRAVEL: black (N 2.5); saturated; loose; 30% coarse and medium, angular sand; 70% fine, angular gravel; very strong hydrocarbon odor
5											
6	48			26	0	6-7	250-350			GP	
7											Total depth of boring = 10 feet
8				26	0	6-7	250-350				
9	24		IR01B366090	26	0	6-7	250-350				
10											
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Tetra Tech EM Inc.

### Log of Boring: IR01B367

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA-GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 12/04/02  
**Completed:** 12/04/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1			IR01B367020							ML	SANDY SILT: brown (10YR 4/3); moist; soft; 15% coarse, angular sand; 85% silt; color changes to greenish gray (5BG 6/1) at 3.5 feet
2	48		IR01B367100	0	10	10	150-250				
3											
4										CL	SILTY CLAY: brown (10YR 4/3); moist; soft; 90% clay; 10% silt; trace loose, coarse, angular gravel; strong odor and oily sheen at 8 feet
5				0	10	10	150-250				
6	48										
7											
8			IR01B367080	8	10	10	150-250				Same as above, but saturated below 7 feet
9	24			3	10	10	150-250				
10											Total depth of boring = 10 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B368

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVm (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1			IR01B368020								SILTY CLAY: red (10R 4/6); soft; moist; color changes to greenish black (10Y 2.5/1); 4-inch layer of trace coarse, angular gravel at 2 feet; 2-foot layer of coarse, angular sand at 4 feet; strong volatile/hydrocarbon odor from 7 to 10 feet
2	48		IR01B368100	0	0	10	250-300				
3											
4				26	0	10	250-300				
5											Same as above, but saturated below 8 feet
6	48										
7			IR01B368070	100	0	10	250-300				
8											
9		24		100	0	10	250-300				
10											Total depth of boring = 10 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B369**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.10

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1			IR01B369020							CL	SANDY CLAY: red (10R 4/6); moist; soft; color changes to greenish gray (5BG 6/1) at 2 feet
2	48		IR01B369100	0	0	10	250-350				
3											
4				65	0	10	250-350			SW	Well-graded SAND: greenish black (5BG 2.5/1); loose; 95% fine to medium sand; 5% silt; strong odor
5											
6	48									CL	LEAN CLAY: black (N 2.5/1); wet; soft; 95% clay; 5% fine to medium sand; strong odor
7				65	0	10	250-350				
8											
9	24		IR01B369090	69	0	10	250-350				
10											Total depth of boring = 10 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B370

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA-GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.30

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B370020							CL	SANDY LEAN CLAY: dark reddish gray (2.5YR 3/1); moist; soft; 90% clay; 10% sand; color changes to dusky red (10R 3/4); trace loose, angular, coarse sand at 2 feet
2			IR01B370030	0	1	7-8	175-250				
3				0	1	7-8	175-250				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B371

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.30

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B371020							CL	SANDY LEAN CLAY: brown (10YR 4/3); moist; soft; 90% clay; 10% sand; 4-foot layer of brick at 1.5 feet; color changes to gray (10YR 5/1) at 2 feet
2			IR01B371030	0	0	10	200-300				
3				0	0	10	200-300				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B372

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.10

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B372020							CL	SANDY LEAN CLAY: brown (10YR 4/3); moist; soft; 90% clay; 10% fine to medium sand; trace gray (N 5/) coarse, angular gravel at 2.5 feet
2		IR01B372030	0	0	5	150-250					
3				0	0	5	150-250				Total depth of boring = 3 feet
4											
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Tetra Tech EM Inc.

### Log of Boring: IR01B373

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B373020							SW	Well-graded GRAVELLY SAND WITH CLAY: very dark grayish brown (2.5Y 3/2); moist; loose; 75% fine to coarse, angular to subrounded sand; 15% fine to coarse, angular to subrounded gravel; 10% clay
2			IR01B373030	0	0	11-19	100-180			SC	
3				0	0	10-17	140-200				CLAYEY SAND WITH GRAVEL: very dark grayish brown (2.5Y 3/2); moist; loose; 60% fine to coarse sand; 30% clay; 10% fine gravel
4											Total depth of boring = 3 feet
5											
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Tetra Tech EM Inc.

### Log of Boring: IR01B374

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 10.40

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B374020							SW	Well-graded GRAVELLY SAND WITH SILT: very dark gray (2.5Y 3/1); moist; loose; 70% fine to coarse, angular to subangular sand; 20% fine to coarse, angular gravel; 10% silt
2			IR01B374030	0	0	8-12	120-200				
3				0	0	7-10	140-200			GW	Well-graded SANDY GRAVEL: greenish gray (5GY 6/1); 75% fine to coarse gravel; 25% fine to coarse sand
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B375**

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 10.80

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B375020							SC	CLAYEY SAND WITH GRAVEL: very dark grayish brown (10YR 3/2); moist; loose; 60% fine to coarse, angular to subangular sand; 30% clay; 10% fine to coarse, angular to subangular gravel; content changes to 50% sand, 30% gravel, and 20% clay at 1.5 feet  GRAVELLY SAND WITH CLAY: very dark grayish brown (10YR 3/2); moist; loose; 50% angular to subangular sand; 30% angular to subangular gravel; 20% clay  Total depth of boring = 3 feet
2			IR01B375015	40	0	10-13	120-160			SW	
3			IR01B375030	0	0	9-13	160-220				
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B376**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 11.30

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B376020							SW	Well-graded SAND WITH GRAVEL AND CLAY: dark grayish brown (2.5Y 4/2); moist; loose; 80% fine to coarse, angular to subangular sand; 10% fine to coarse, angular to subangular gravel; 10% lean clay
2			IR01B376030	0	0	6-12	100-160				
3				0	0	6-13	100-140				GRAVELLY SAND WITH CLAY: (2.5Y 4/2), moist; loose; 60% sand; 30% gravel; 10% lean clay; with trace brick fragments
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B377**

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 8.90

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B377020							ML	CLAYEY SILT: light brownish gray (10YR 6/2); dry to moist; 85% silt; 15% clay
2			IR01B377030	0	0	3	200-400			SP	Poorly graded SAND: light brownish gray (10YR 6/2); moist; loose; 95% sand; 5% clay
3			IR01B377030A	0	0	3	200-400				Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B378**

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 6.60

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B378020							SC	CLAYEY SAND: very dark grayish brown (10YR 3/2); moist; loose; 75% fine to coarse, angular to subrounded sand; 20% high plasticity clay; 5% fine to coarse gravel
2			IR01B378030	0	0	10-16	120-180			GW	Well-graded SANDY GRAVEL: greenish gray (5GY 6/1); moist; loose; 75% fine to coarse, angular gravel; 25% fine to coarse, angular sand
3				0	0	8-14	180-260				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B379

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.30

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B379020							SW	Well-graded SAND: very dark grayish brown (10YR 3/2); moist; loose; 90% fine to coarse, angular to subrounded sand; 5% silt and clay; 5% fine gravel
2			IR01B379030	0	0	8-12	140-190			GW	
3				0	0	8-12	260-300			SW	
4											Well-graded SAND: greenish black (10Y 2.5/1); moist; loose; 95% fine to medium sand; 5% silt and clay
5											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B380

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS1  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 11.90

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
0											BASEROCK
1	36		IR01B380020							CL	LEAN CLAY: gray (2.5Y 6/1); dry; 95% clay; 5% silt
2			IR01B380030	0	0	3	300-400				
3			IR01B380030A	0	0	3	300-400				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B381

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 10.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B381020							ML	SILT: light brownish gray (10YR 6/2); moist to dry; 95% silt; 5% clay
2			IR01B381030	0	0	3	200-310				
3			IR01B381030A	0	0	3	200-310				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B382

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 9.20

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B382020							SP	Poorly graded SAND: light brownish gray (10YR 6/2); moist; loose; 95% sand; 5% clay
2		IR01B382030	0	0	3	300-400					
3		IR01B382030A	0	1	3	300-400					
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B383

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.50

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B383020							SW	Well-graded SAND: brown (10YR 4/3); moist; loose; 90% fine to coarse, angular to subrounded sand; 10% silt and clay
2			IR01B383030	0	0	5-9	140-200			GW	Well-graded SANDY GRAVEL: brown (10YR 4/3); moist; medium dense; 60% fine to coarse, angular to subrounded gravel; 40% fine to coarse sand
3				0	0	8-14	120-180			SW	Well-graded SAND: dark brown (10YR 3/3); moist; medium dense; 95% fine to medium sand; 5% silt and clay
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B384**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.40

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B384020							SC	CLAYEY SAND WITH GRAVEL: dark olive gray (5Y 3/2); moist; loose; 45% fine to coarse, angular to subangular sand; 40% high plasticity clay; 15% fine to coarse, angular gravel
2			IR01B384030	0	0	8-13	160-240			SW	Well-graded SAND: brown (10YR 4/3); 95% fine to medium sand; 5% silt and clay
3				0	0	10-18	180-240				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B385

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B385020							SW	Well-graded SAND: light olive brown (2.5Y 5/3); moist; loose; 100% fine to coarse, angular to subangular sand
2			IR01B385030	0	0	11-14	160-260			SC	SANDY GRAVEL WITH CLAY: light olive brown (2.5Y 5/3); moist; loose; 45% fine to coarse gravel; 40% fine to coarse sand; 15% medium plasticity clay; trace chert fragments
3				0	0	12-16	180-240				CLAYEY SAND: very dark grayish brown (2.5Y 3/2); moist; loose; 90% fine to medium sand; 10% clay
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B386

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 6.80

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B386020							SW	Well-graded SAND: very dark grayish brown (10YR 3/2); moist; loose; 95% fine to coarse, angular to subrounded sand; 5% silt and clay; trace roots to 1 foot
2			IR01B386030	0	0	9-19	180-280			SC	CLAYEY SAND: very dark grayish brown (10YR 3/2); 80% fine to coarse sand; 20% medium stiff, medium plasticity clay; trace fine to coarse gravel
3				0	0	9-14	180-220				Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B387**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 10.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B387020							CL	LEAN CLAY: bluish gray (5B 5/1); dry; soft; 95% clay; 5% silt
2			IR01B387030	0	0	3	299				LEAN CLAY: brown (7.5YR 5/4); moist; medium stiff; trace of fine, angular gravel
3			IR01B387030A	0	0	3	299				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B388

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 10.20

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B388020							SP	Poorly graded SAND: light brownish gray (10YR 6/2); moist; loose; 95% coarse sand; 5% silt
2		IR01B388030	0	0	3	300-400					
3		IR01B388030A	0	0	3	300-400					
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B389**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B389020							SW	Well-graded SAND: very dark brown (10YR 2/2); moist; loose; 90% fine to coarse, angular to subrounded sand; 10% silt and clay
2			IR01B389030	0	0	12-18	100-140			SC	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); moist; 65% fine to coarse sand; 30% high plasticity clay; 5% fine to coarse gravel
3				0	0	12-20	180-240				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B390

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.20

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B390020							SW	Well-graded SAND: very dark grayish brown (10YR 3/2); moist; loose; 90% fine to coarse, angular to subrounded sand; 10% silt and clay
2			IR01B390030	0	0	10-13	120-180			SC	CLAYEY SAND: greenish black (10Y 2.5/1); moist; loose; 65% fine to coarse sand; 30% high plasticity clay; 5% fine to coarse gravel
3				0	0	10-15	180-280				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B391

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 8.90

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0				0							Ground Surface
1	36		IR01B391020							ML	CLAYEY SILT: light brownish gray (10YR 6/2); moist; loose; 90% silt; 10% clay; trace of coarse sand
2			IR01B391030	0	0	3	200-400			SW	Well-graded SAND: light brownish gray (10YR 6/2); moist; loose
3			IR01B391030A	0	0	3	200-400				
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B392**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 6.90

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B392020							SW	Well-graded SAND: light brownish gray (10YR 6/2); dry to moist; loose; approximately 1% silt and 99% sand; sand size grades from fine to coarse with depth
2		IR01B392030	0	0	3	365					
3				0	0	3	365				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B393

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.40

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B393020				431			ML	CLAYEY SILT: light brownish gray (10YR 6/2); moist; soft; 90% silt; 10% clay
2			IR01B393030	0	2	3	431			SW	Well-graded SAND: light brownish gray (10YR 6/2); moist; loose; medium sand
3				0	0	3	431				Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR01B394**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 7.10

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B394020							SW	Well-graded SAND: very dark brown (10YR 2/2); moist; loose; 90% fine to coarse, angular to subrounded sand; 10% silt and clay
2			IR01B394030	0	0	9-15	180-220			SC	CLAYEY SAND: very dark brown (10YR 2/2); moist; medium dense; 75% fine to coarse sand; 20% clay; 5% fine to coarse gravel
3				0	0	9-12	180-240				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B395

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSJ  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 9.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B395020							SW	Well-graded SAND WITH GRAVEL AND CLAY: very dark grayish brown (2.5Y 3/2); 80% fine to coarse, angular to subrounded sand; 10% fine to coarse, angular to subrounded gravel; 10% clay
2			IR01B395030	0	0	7-10	200-240			SC	CLAYEY SAND WITH GRAVEL: dark olive gray (5Y 3/20); 45% fine to coarse sand; 40% clay; 15% fine to coarse gravel
3				0	0	7-13	100-160				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B396

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 8.70

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B396020							CH	SANDY FAT CLAY WITH GRAVEL: greenish black (10Y 2.5/1); 55% fat, medium to high plasticity clay; 35% fine to coarse, angular to subangular sand; 10% fine to coarse gravel; trace concrete at 2.5 feet
2			IR01B396030	0	0	8-10	120-200				
3				0	0	8-16	100-220				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B397

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** JIM ANDERSON  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 8.10

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B397020							SC	CLAYEY SAND WITH GRAVEL: very dark grayish brown (2.5Y 3/2); moist; loose; 75% fine to coarse sand; 15% clay; 10% fine to coarse, angular to subangular gravel
2			IR01B397030	0	0	10-15	120-180			SW	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); moist; loose; 50% sand; 40% clay; 10% fine to coarse, angular to subangular gravel
3				1.4	0	8-14	120-180				Well-graded SAND WITH GRAVEL AND CLAY: very dark grayish brown (2.5Y 3/2); moist; 80% fine to medium sand; 10% fine to coarse, angular to subangular gravel; 10% clay
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B398

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 9.30

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B398020							ML	CLAYEY SILT: light brownish gray (10YR 6/2); dry to moist; soft to medium stiff; 90% silt; 10% clay
2			IR01B398030	0	0	3	371			SW	Well-graded SAND: light brownish gray (10YR 6/2); moist; loose; medium sand
3			IR01B398030A	0	0	3	371				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01B399

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):** 8.70

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/26/02  
**Completed:** 11/26/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR01B399020							CL	LEAN CLAY: dark grayish brown (10YR 4/2); moist; soft; 95% clay; 5% silt
2			IR01B399030	0	0	7-8	200-300				
3				0	0	7-8	200-300				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH001

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/11/02  
**Completed:** 09/11/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH001005	0	N		SM	Ground Surface
1				0				SILTY SAND WITH GRAVEL: reddish gray (2.5YR 5/1); wet; loose; 60% sand; 20% nonplastic silt; 20% gravel; with brick chips and shell fragments; boring location is within a debris area
2			IR01SH001025	0				Same as above, but becomes saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH002

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/11/02  
**Completed:** 09/11/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH002005	0	N		SM	Ground Surface
1									Well-sorted SILTY SAND: dusky red (10R 3/2); wet; loose; 80% fine sand; 20% nonplastic silt
2				IR01SH002025	0				Same as above, with some brick chips; becomes saturated below 0.5 foot bgs
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH003

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/11/02  
**Completed:** 09/11/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH003005	0	N		SC	Ground Surface
1									Well-sorted CLAYEY SAND: dark reddish brown (2.5YR 3/3); moist to wet; dense; 70% sand; 30% clay
2				IR01SH003025	3.7				Same as above, but becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH004

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH004005	0	11		CL	Ground Surface
1					0				SANDY CLAY: dark gray (5YR 4/1); wet; medium stiff; 60% clay; 40% well-sorted sand
2				IR01SH004025	0				Same as above, but becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH005

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH005005	0	N		SC	Ground Surface
1									Well-sorted CLAYEY SAND: brown (7.5YR 5/3); wet; medium dense; 70% sand; 30% slight plasticity clay
2				IR01SH005025	0				Same as above, with some brick chips; becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH006

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH006005	0	~1		GC	Ground Surface
1				0			SC	Poorly sorted CLAYEY GRAVEL WITH SAND: brown (7.5YR 4/4); wet; dense; 50% gravel; 30% slightly plastic clay; 20% sand; with some grass roots
2			IR01SH006025	0				Well-sorted CLAYEY SAND: brown (7.5YR 5/2); saturated; loose; slight plasticity; fine sand
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH007

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH007005				SC	Ground Surface
1				0				Poorly sorted CLAYEY SAND WITH GRAVEL: very dark gray (7.5YR 3/1); wet; loose; 60% sand; 20% nonplastic clay; 20% gravel; with some roots and brick chips
2			IR01SH007025	0				Same as above, but becomes saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH008

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH008005				SM	Ground Surface
1					0				Well-sorted SILTY SAND: dark brown (7.5YR 3/2); wet; medium dense; 80% fine sand; 20% silt; with roots and brick chips
2				IR01SH008025	0				Same as above, but becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH009

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** HSA  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH009005	0	N		SM	Ground Surface Well-sorted SILTY SAND WITH GRAVEL: dark reddish gray (5YR 4/2); moist; loose; 80% fine sand; 10% silt; 10% rounded gravel (up to 2 cm in diameter); with little roots and brick chips
2				IR01SH009025	0				Well-sorted SILTY SAND WITH GRAVEL: dark reddish gray (5YR 4/2); saturated; loose; 80% fine sand; 10% silt; 10% gravel; with some bricks and glass
2.5									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH010

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH010005		N		SM	Ground Surface
1					0				Well-sorted SILTY SAND: yellowish red (5YR 5/6); moist; loose; fine sand; with organic matter and roots present
2				IR01SH010025	0				Same as above, but no apparent organic matter; becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH011

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH011005	0	N		SM	Ground Surface
1					0				Well-sorted SILTY SAND: brown (10YR 5/3); moist; loose; fine sand; with trace brick pieces and organic matter and roots
2				IR01SH011025	0				Same as above, but with no roots; becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH012

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH012005		N		SM	Ground Surface
1								Well-sorted SILTY SAND WITH GRAVEL: brown (7.5YR 4/4); moist; loose; 75% fine sand; 20% silt; 5% gravel
2			IR01SH012025					Well-sorted SILTY SAND: very dark gray (5YR 3/1); saturated; dense; fine sand; with brick chips
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH013

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH013005	0	N		SM	Ground Surface
1									Well-sorted SILTY SAND: light reddish brown (2.5YR 6/3); slightly moist; loose; fine sand
2				IR01SH013025	1				Well-sorted SILTY SAND WITH GRAVEL: light reddish brown (2.5 YR 6/3); saturated; loose; 65% fine sand; 20% silt; 15% subrounded gravel (up to 3 cm in diameter); with some bricks
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH014

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH014005	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND: black (Gley 1 2.5/N); wet; medium dense; fine sand; silt is nonplastic
2			IR01SH014025	0				Same as above, but becomes saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH015

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH015005	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND: black (Gley 1 2.5/N); wet; loose; 80% fine sand; 20% nonplastic silt
2			IR01SH015025	0				Same as above, but becomes saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH016

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH016005	0	N		SM	Ground Surface
1									Well-sorted SILTY SAND: black (Gley 1 2.5/N); wet; loose; 70% fine sand; 30% silt
2				IR01SH016025	0				Same as above, but becomes saturated below 0.5 foot; with glass and brick pieces
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH017

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH017005	0			SM	Ground Surface
1								Well-sorted SILTY SAND: weak red (2.5YR 4/2); moist; loose; 70% fine sand; 30% silt; grass and roots are present
2			IR01SH017025	0				Same as above; becomes wet, with some brick pieces and roots
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH018

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH018005	0			CL	Ground Surface
1				0			SM	SANDY CLAY WITH GRAVEL: dark reddish gray (10YR 3/1); moist; medium stiff; 65% plastic clay; 30% sand; 5% gravel; with some roots and organic matter
2			IR01SH018025	0				Well-sorted SILTY SAND WITH CLAY: black (2.5Y 2.6/1); wet; medium dense; 60% fine sand; 30% silt; 10% clay
3								Same as above, but becomes saturated below 1.5 feet
4								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH019

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION	
0	30			IR01SH019005	0	1.14		SC	Ground Surface	
1										Well-sorted CLAYEY SAND: brown (5YR 4/3); moist; medium dense; 70% fine sand; 30% clay; roots are present
2				IR01SH019025	0				Becomes wet below 0.5 foot	
3								Becomes saturated below 1.0 foot; color changes to black (10YR 2/1) below 2.0 feet		
4								Total depth of boring = 2.5 feet		
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Tetra Tech EM Inc.

### Log of Boring: IR01SH020

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH020005	0	N		CH	Ground Surface
1								SC	SILTY CLAY: dusky red (10R 3/2); wet; medium stiff; 85% plastic clay; 15% silt; with some roots and organic matter
2				IR01SH020025	0				Well-sorted CLAYEY SAND: very dark gray (Gley 1 3/N); saturated; medium dense; fine sand; some organic matter
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH021

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH021005	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND: reddish brown (5YR 4/3); saturated; loose; 90% medium sand; 10% silt; with some roots
2			IR01SH021025	0				Color changes to very dark gray (Gley 1 3/N)
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH021S

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH021005S	0	N		SM	Ground Surface
1					0				Well-sorted SILTY SAND: black (7.5YR 2.5/1); wet; 75% sand; 25% silt
2				IR01SH021025S	0				Moisture content increases to saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
4									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH021W

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH021005V		N		SM	Ground Surface
1				0				Poorly sorted SILTY SAND WITH GRAVEL: reddish brown (2.5YR 5/4); moist to wet; medium dense; 50% sand; 25% silt; 25% gravel; with roots present
2			IR01SH021025V	0				Moisture content increases to saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
4								
5								
6								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH022

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH022005	0	N		SM	Ground Surface Well-sorted SILTY SAND: brown (10YR 4/3); wet; moderately dense; 70% medium sand; 30% nonplastic silt; with roots and wood chips
1								
2			IR01SH022025	0				Well-sorted SILTY SAND: black (Gley 1 2.5/N); saturated; moderately dense; 70% medium sand; 30% nonplastic silt; with roots, wood chips, and black-stained organic matter
3								
4								Total depth of boring = 2.5 feet
5								
6								
7								
8								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH022E

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH022005E	0	N		SM	Ground Surface
1					0				Well-sorted SILTY SAND: reddish brown (2.5YR 5/4); wet; loose; 75% fine sand; 25% silt
2				IR01SH022025E	0				Moisture content increases to saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
4									
5									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH023

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/06/02  
**Completed:** 09/06/02  
**Boring Depth (feet bgs):** 4.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0		48							Ground Surface
1					0	11		SP	Well-sorted GRAVELLY SAND: pale red (10R 6/3); dry; loose; 85% fine sand; 15% gravel
2				IR01SH023TOP					Same as above, but becomes saturated below 0.5 foot
3									
4									Total depth of boring = 4 feet
5									
6									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH024

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH024005	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND WITH GRAVEL: reddish brown (5YR 5/4); wet; medium dense; 80% fine sand; 15% silt; 5% gravel
2			IR01SH024025	0				Well-sorted SILTY SAND: reddish brown (5YR 5/4); saturated; medium dense; fine sand
3								Total depth of boring = 2.5 feet
4								
5								
6								
7								
8								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH025

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH025005	0	N		SW	Ground Surface Moderately well-sorted GRAVELLY SAND: black (5YR 2.5/1); wet; loose; 60% medium sand; 40% loose gravel (up to 3 cm in diameter)
1									
2				IR01SH025025	0				Content becomes 70% sand, 20% gravel, 10% silt; sand becomes fine- to medium-grained; saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
4									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH026

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH026005	0	N		SP	Ground Surface Well-sorted SAND WITH GRAVEL AND SILT: reddish black (2.5YR 2.5/1); wet; loose; 80% fine to medium sand; 10% gravel; 10% silt; with some sea shells
1									
2				IR01SH026025	0				Same as above, but becomes saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH027

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/06/02  
**Completed:** 09/06/02  
**Boring Depth (feet bgs):** 12.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48							Ground Surface
1				0			SW	Poorly sorted GRAVELLY SAND WITH SILT: reddish brown (5YR 5/4); dry; loose; 65% sand; 30% loose gravel (up to 4 cm in diameter); 5% silt
2			IR01SH027TOP					
3								
4								
5	36							Same as above, with some wood chips from 5 to 8 feet
6			IR01SH027MID	0				
7								
8	0						SM	Well-sorted SILTY SAND: black (Gley 1 2.5/N); moist to wet; soft; medium sand; with trace to little wood chips
9				0				
10			IR01SH027BOT					
11								
12								Total depth of boring = 12 feet
13								
14								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH028

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH028005	4	N		SP	Ground Surface Well-graded GRAVELLY SAND: black (Gley 1 2.5/N); wet; loose; 75% fine to medium, rounded sand; 25% gravel; material is black sandblasting abrasive
1								
2			IR01SH028025	4.5				Becomes saturated below 0.5 foot; poor recovery from 0.5 to 2.5 feet; three attempts required to get enough recovery for sampling purposes
3								
4								
5								Total depth of boring = 2.5 feet
6								
7								
8								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH028E

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH028005E	0	N		SC/CH	Ground Surface
1					0			CH	Clayey SAND/Sandy CLAY, black (Gley 1 2.5/N), 50% sand, 50% clay, well sorted, wet, soft, clay is plastic
2				IR01SH028025E	0				Silty CLAY, dark greenish gray (Gley 1 4/5G), very plastic, moist, with hard shells present.
3									Total depth of boring = 2.5 feet
4									
5									
6									
7									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH029

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH029005	0			SW	Ground Surface
1						1.1		CH	Poorly sorted GRAVELLY SAND WITH SILT: dark reddish gray (10R 3/1); wet; loose; 50% sand, 40% gravel (up to 3 cm in diameter); 10% silt; with some sea shells and glass
2				IR01SH029025					SILTY CLAY: very dark gray (Gley 1 3/N); saturated; medium stiff; high plasticity; 90% clay; 10% silt
3									Total depth of boring = 2.5 feet
4									
5									
6									
7									
8									
9									
10									
11									
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**Tetra Tech EM Inc.**

**Log of Boring: IR01SH030**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/06/02  
**Completed:** 09/06/02  
**Boring Depth (feet bgs):** 20.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	0							Ground Surface
1				0			SP	Well-sorted GRAVELLY SAND WITH SILT: reddish brown (5YR 5/3); dry; loose; 65% sand; 30% gravel (up to 2 cm in diameter); 5% silt
2			IR01SH030TOP				SM	Well-sorted SILTY SAND: reddish brown (5YR 5/3); moist; loose; 80% fine sand; 20% silt
3								
4								
5	36							
6			IR01SH030MID					
7				0				
8	48							
9								
10			IR01SH030BOT	0				
11								
12								
13	36						GP/SP	Well-sorted SANDY GRAVEL/GRAVELLY SAND: black (Gley 1 2.5/N); wet; loose; 50% gravel; 50% sand; with oily contamination and petroleum hydrocarbon odor
14			IR01SH030B16					
15								
16	48			150				
17								
18			IR01SH030B20					Same as above, with persistent petroleum hydrocarbon odor
19				47				
20								Total depth of boring = 20 feet
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								



Tetra Tech EM Inc.

### Log of Boring: IR01SH031

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH031005	0	N		CL	Ground Surface
1				0			CH	SILTY CLAY: very dark gray (Gley 1 3/N); wet; medium stiff; 80% slightly plastic clay; 20% silt
2			IR01SH031025	0				SILTY CLAY: dark gray (Gley 1 4/N); saturated; 95% high plasticity clay; 5% silt; with some shell fragments and Bay Mud odor
3								Total depth of boring = 2.5 feet
4								
5								
6								
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8								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH032

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH032005	0	N		SC CH	Ground Surface Well-sorted CLAYEY SAND WITH GRAVEL: brown (7.5YR 4/2); moist; medium dense; 55% sand; 30% slight plasticity clay; 15% gravel
1								
2			IR01SH032025	0				SANDY CLAY: dark gray (Gley 1 4/N); saturated; stiff; 90% plastic clay; 10% sand
3								Total depth of boring = 2.5 feet
4								
5								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH033

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/05/02  
**Completed:** 09/05/02  
**Boring Depth (feet bgs):** 12.00  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48						SM	Ground Surface Well-sorted SILTY SAND WITH GRAVEL: reddish brown (2.5YR 5/3); dry; loose; 65% fine sand; 25% silt; 10% gravel
1			IR01SH033TOP					
2								
3								
4	48						GP	Well-sorted GRAVEL: greenish gray (Gley 1 5/10Y); dry; loose; subangular
5								
6			IR01SH033MID					Well-sorted SANDY GRAVEL WITH SAND: weak red (10R 4/2); slightly moist; loose
7								
8	48						SM	Well-sorted SILTY SAND WITH CLAY: black (Gley 1 2.5/N); saturated; loose; soft; 65% fine to medium sand; 25% silt; 10% clay; with strong petroleum hydrocarbon odor
9			IR01SH033BOT					
10								
11								
12								Total depth of boring = 12 feet
13								
14								
15								
16								
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Tetra Tech EM Inc.

### Log of Boring: IR01SH034

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH034005	0	N		SM	Ground Surface Well-sorted SILTY SAND: weak red (5YR 4/4); moist to wet; loose; 90% medium to coarse sand (mostly silica); 10% silt
2			IR01SH034025	8				Moisture content increases saturated below 0.5 foot; with black staining and petroleum hydrocarbon odor
3								NOTE: Due to field conditions, the original boring location was moved 10 feet east for accessibility Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH035

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH035005		11		SM	Ground Surface
1				Well-sorted SILTY SAND: pinkish white (2.5YR 8/2); slightly moist; loose; 75% fine sand (soft beach sand); 25% silt					
2				IR01SH035025					Moisture content increases to saturated below 1.5 feet; medium sand with depth; with occasional laminated layers of black sand (up to 2 cm thick)
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH036

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/05/02  
**Completed:** 09/05/02  
**Boring Depth (feet bgs):** 12.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48						SP	Ground Surface
1								Well-sorted SILTY SAND WITH GRAVEL: gray (5YR 5/1); slightly moist; loose; 70% fine sand; 20% silt; 10% gravel; with occasional layers of black sand (up to 2 inches thick)
2			IR01SH036TOP					
3								
4	48							Well-sorted SAND: pink to black (5YR 8/4 to 5Y 2.5/1); moist; loose; fine to medium; with zones of silty sand, with gravel (up to 1 inch thick)
5								
6			IR01SH036MID					
7								Moisture content increases to saturated below 7 feet
8	48						CH	
9								
10			IR01SH036BOT					CLAY: very dark gray (Gley 1 3/N); saturated; stiff; high plasticity
11								
12								Total depth of boring = 12 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH037

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH037005	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND: weak red (10R 5/2); dry; loose; 70% fine to medium sand; 30% silt; with roots present
2			IR01SH037025	0				Color changes to reddish brown (5YR 4/4); moisture content increases to saturated below 0.5 foot; dense; with some roots, wood chips, and black sand
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH038

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/04/02  
**Completed:** 09/04/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH038005		14		SM	Ground Surface
1				IR01SH038025					Well-sorted SILTY SAND: pinkish gray (5YR 7/2); slightly moist; loose; 80% fine sand; 20% silt; with sea shells and black sand
2									Moisture content increases to wet from 1 to 2 feet; saturated below 2 feet
3									Total depth of boring = 2.5 feet
4									
5									
6									
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Tetra Tech EM Inc.

### Log of Boring: IR01SH039

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/05/02  
**Completed:** 09/05/02  
**Boring Depth (feet bgs):** 12.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48						SM	Ground Surface Well-sorted SILTY SAND: light gray (10R 7/1); dry; loose; 70% fine sand; 30% silt
1								
2			IR01SH039TOP					Moisture content increases to wet
3								
4	36							
5								
6			IR01SH039MID				CL	SANDY CLAY: black (7.5YR 2.5/1); saturated; medium stiff; slight plasticity; 50% clay; 50% fine sand; with wood chips and strong petroleum hydrocarbon odor
7							CH	CLAY: black (Gley 1 2.5/1); saturated; soft; high plasticity
8	48							
9								
10			IR01SH039BOT					
11								
12								Total depth of boring = 12 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH040

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/27/02  
**Completed:** 08/27/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH040005	0			SM	Ground Surface Well-sorted SILTY SAND: dark reddish brown (5YR 5/3); slightly moist; loose; fine sand; with some black sand, plant roots, and shell fragments
1								
2			IR01SH040025					Same as above, with some gravel; boring location is surrounded by black sand area; however, black sand is not present below 0.5 foot
3								
4								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH040S

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH040005S	0	N		SM	Ground Surface
1				0				Well-sorted SILTY SAND: pale red (10R 6/2); wet; loose; 90% medium to coarse sand; 10% silt; with abundant roots and shells
2			IR01SH040025S	0				Moisture content increases to saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH040W

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH040005V	0	1.1		SM	Ground Surface Well-sorted SILTY SAND: pale red (10R 6/2); wet; loose; 80% fine to medium sand; 20% silt; with sea shell fragments
1									
2				IR01SH040025V	0				Moisture content increases to saturated below 1 foot
3									
4									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH041

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/27/02  
**Completed:** 08/27/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH041005	0			SM	Ground Surface
1								Well-sorted SILTY SAND: grayish brown (10YR 5/2); slightly moist; 80% fine sand; 20% silt
2			IR01SH041025	0				Color changes to brown (7.5YR 4/2); moist; silt content increases to 30%
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH041N

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR01SH041005N	0	N		SM	Ground Surface
1				0				Well-sorted SILTY SAND: light red (2.5YR 6/6), wet; loose; 90% fine sand; 10% silt
2			IR01SH041025N	0				Moisture content increases to saturated below 0.5 foot
3								Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH041S

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/12/02  
**Completed:** 09/12/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH041005S	0	N		SM	Ground Surface
1					0				Well-sorted SILTY SAND: brown (7.5YR 5/4); wet; loose; 90% fine to medium sand; 10% silt; with shell fragments and roots
2				IR01SH041025S	0				Moisture content increases to saturated below 0.5 foot
3									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR01SH042

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/03/02  
**Completed:** 09/03/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-01  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR01SH042005		14		SM	Ground Surface
1				IR01SH042025					Well-sorted SILTY SAND: pinkish gray (5YR 7/2); slightly moist; loose; 80% fine sand; 20% silt; with shell fragments and black sand
2									Moisture content increases to wet from 0.5 to 2 feet; saturated below 2 feet
3									Total depth of boring = 2.5 feet
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**IR-02 BORING LOGS**

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**Tetra Tech EM Inc.**

**Log of Boring: IR02B402**

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 8.80

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B402020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry to moist; soft
2		12	IR02B402030	0	0	2	200-400			SW	Well-graded SAND: black (N 2.5/); moist; loose; medium to coarse
3				0	0	2	200-400				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B404

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 9.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B404020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry; soft
2		12	IR02B404030	0	0	25	200-400			SW	Well-graded SAND: black (N 2.5/); moist; loose; medium to coarse sand
3				0	0	25	200-400				Total depth of boring = 3 feet
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6											
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**Tetra Tech EM Inc.**

**Log of Boring: IR02B409**

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.60

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B409020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry; soft
2		12	IR02B409030	0	0	3	200-400			SW	Well-graded SAND: light brownish gray (10YR 6/2); moist; loose to medium dense; oily sheen; with slight odor
3			IR02B409030A	0	0	3	200-400				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B434

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/13/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 6.20

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B434020							SM	SILTY SAND: yellowish brown (10YR 5/4); dry; loose; 80% fine to medium sand; 20% silt
2			IR02B434030	0	0	15-20	200-250				Color changes to brown (10YR 5/3)
3	12		IR02B434030A	0	0	15-20	200-250				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B435

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 6.60

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
0.5		24	IR02B435020							SM	Well-graded SILTY SAND: dark yellowish brown (10YR 4/4); dry; loose
1.5											SILTY SAND: olive-yellow (5Y 6/6); dry; loose
2.0		12	IR02B435030	0	0	15	150				SILTY SAND: black (5Y 2.5/1); dry; loose; coarse, angular sand
2.5			IR02B435030A	0	0	15	150				SILTY SAND: dark yellowish brown (10YR 4/4); moist; medium dense; fine to coarse sand
3.0											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B437

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 9.00

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B437020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry; soft
2		12	IR02B437030	0	0	3	400-500			SW	Well-graded SAND: greenish gray (5GY 5/1); moist; loose to medium dense; trace angular gravel
3			IR02B437030A	0	0	3	400-500				
4											Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR02B438**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.90

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B438020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry; soft
2		12	IR02B438030	0	0	3	355			SW	Well-graded SAND: greenish gray (5GY 5/1); moist; loose; medium to coarse; with trace fine, angular gravel
3			IR02B438030A	0	0	3	355				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B449

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 8.30

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B449020							CL	SILTY CLAY: light brownish gray (10YR 6/2); dry; soft
2		12	IR02B449030	0	0	3	200-400			SW	Well-graded SAND: very dark brown (7.5YR 2.5/2); moist; loose; medium to coarse sand
3			IR02B449030A	0	0	3	200-400				
4											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B452

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.20

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION	
0											Ground Surface	
1		36	IR02B452020							SM	Well-graded SILTY SAND: dark yellowish brown (10YR 4/4); dry; loose; 80% medium to coarse sand; 20% silt	
2		IR02B452030	0	0	15	150						
3		IR02B452030A	0	0	15	150						
4											Total depth of boring = 3 feet	
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Tetra Tech EM Inc.

### Log of Boring: IR02B470

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 6.60

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1	24		IR02B470020							SM	SILTY SAND: yellowish brown (10YR 5/4); dry; loose; 80% medium sand; 20% silt
2			IR02B470030	0	0	15-20	150-200				Well-graded SILTY SAND WITH CLAY: dark grayish brown (10YR 4/2); moist; medium dense; 75% sand; 15% silt; 10% clay Total depth of boring = 3 feet
3	12		IR02B470030A	0	0	15-20	150-200				
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Tetra Tech EM Inc.

### Log of Boring: IR02B512

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.00

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 12/04/02  
**Completed:** 12/04/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR02B512020							SW	Well-graded SAND: very dark grayish brown (10YR 3/2); moist; loose; fine to medium sand
2			IR02B512030	0	0	8	275-350				
3				0	0	8	275-350				Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02B515

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 12/04/02  
**Completed:** 12/04/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** TIM WATCHERS  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.10

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR02B515020							CL	SILTY CLAY: very dark grayish brown (10YR 3/2); moist; soft; 90% lean clay; 10% silt
2			IR02B515030	0	29	10	175-275			SW	Well-graded SAND: brown (10YR 4/3); moist; loose; fine to medium sand
3				0	29	10	175-275				Total depth of boring = 3 feet
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**Tetra Tech EM Inc.**

**Log of Boring: IR02B517**

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/06/02  
**Completed:** 11/06/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITS I  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 6.80

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVN (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
1		36	IR02B517020							SM	SILTY SAND WITH CLAY: yellowish brown (10YR 5/6); dry; medium dense; 50% fine sand; 30% silt; 20% clay  SILTY SAND: yellowish brown (10YR 5/6); moist; loose; 80% medium to coarse sand; 20% silt  Total depth of boring = 3 feet
2			IR02B517020A	0	0	10	128				
2			IR02B517025	0	0	10	128				
3			IR02B517030								
3.00											
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Tetra Tech EM Inc.

### Log of Boring: IR02B526

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 11/07/02  
**Completed:** 11/12/02  
**Boring Depth (feet bgs):** 3.00  
**Boring Diameter (inches):** 2.50

**Logged By:** BEN LEE  
**Logging Consultant:** ITSI  
**Drilling Company:** PRECISION

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):** 7.20

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	METHANE (% BY VOLUME IN AIR)	GAMMA (MICROREHMS/HR)	ALPHA/BETA (COUNTS/MIN)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0											Ground Surface
0.5		24	IR02B526020							SM	SILTY SAND: dark yellowish brown (10YR 4/4); dry; loose; 80% fine to medium sand; 20% fine silt
1.5											
2.0		12	IR02B526030	0	0	15-20	200-250				
2.5			IR02B526030A	0	0	15-20	200-250				
3.0											Poorly graded SILTY SAND: olive brown (2.5Y 4/3); moist; loose; 90% medium sand; 10% silt
3.0											Total depth of boring = 3 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02SH001

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 09/05/02  
**Completed:** 09/05/02  
**Boring Depth (feet bgs):** 12.00  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48							Ground Surface
1							SW SM	BLACK SAND
2			IR02SH001TOP					Well-sorted SILTY SAND: red (2.5YR 5/6); moist; loose; 90% fine to medium sand; 10% silt
3								
4	24							Moisture content increases to wet below 4 feet
5								
6			IR02SH001MID					
7								
8	24						CH	SANDY CLAY: very dark gray (Gley 1 3/N); saturated; medium stiff; plastic
9								
10			IR02SH001BOT					
11								
12								Total depth of boring = 12 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02SH002

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/30/02  
**Completed:** 08/30/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR02SH002005	0	N		SM	Ground Surface
1									Well-sorted SILTY SAND: dark reddish gray (5YR 4/2); moist; loose; 90% medium to coarse sand; 10% silt; with intermixed black sand and some seashells
2				IR02SH002025	0				
3									Color changes to reddish brown (5YR 5/4); becomes saturated below 0.5 foot; sand content decreases to 75%; silt content increases to 25%; sand becomes fine; no sea shells noted from 0.5 to 2.5 feet
4									
5									Total depth of boring = 2.5 feet
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Tetra Tech EM Inc.

### Log of Boring: IR02SH003

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/30/02  
**Completed:** 08/30/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR02SH003005	0	N		SP SM	Ground Surface
1									
2				IR02SH003025	0				Well-sorted SILTY SAND: reddish brown (5YR 5/4); saturated; loose; 80% fine sand; 20% silt
3									Total depth of boring = 2.5 feet
4									
5									
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Tetra Tech EM Inc.

### Log of Boring: IR02SH004

**Drilling Method:** HAND AUGER  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR02SH004005	0	1.1		SP	Ground Surface
1									Well-sorted GRAVELLY SAND: very dark gray (Gley 1 3/N); wet; loose; 90% angular, coarse sand; 10% rounded to subrounded gravel (up to 3-cm diameter)
2				IR02SH004025	0				
3									Moisture content increases to saturated below 0.5 foot
4									Total depth of boring = 2.5 feet
5									
6									
7									
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Tetra Tech EM Inc.

### Log of Boring: IR02SH004E

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/13/02  
**Completed:** 09/13/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR02SH004005E	0	N		SM	Ground Surface
1					0				Well-sorted SAND WITH GRAVEL: dark reddish gray (5YR 4/2); saturated below 0.2 foot; loose; 70% fine sand; 20% silt; 10% gravel; with abundant shell fragments
2				IR02SH004025E	0				
3									Total depth of boring = 2.5 feet
4									
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Tetra Tech EM Inc.

### Log of Boring: IR02SH004N

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/13/02  
**Completed:** 09/13/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30		IR02SH004005N	0	N		SM	Ground Surface
1								Well-sorted SILTY SAND WITH GRAVEL: dark reddish gray (5YR 4/2); wet to saturated; loose; 70% sand; 20% silt; 10% gravel; shell fragments and kiln bricks present
2			IR02SH004025N	0				
3								Total depth of boring = 2.5 feet
4								
5								
6								
7								
8								
9								
10								
11								
12								
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Tetra Tech EM Inc.

### Log of Boring: IR02SH004W

**Drilling Method:** HAND AUGER  
**Boring Started:** 09/13/02  
**Completed:** 09/13/02  
**Boring Depth (feet bgs):** 2.50  
**Boring Diameter (inches):** 2.00

**Logged By:** A. ABDALLAH  
**Logging Consultant:** R&M ENVIRONMENTAL  
**Drilling Company:** VIRONEX

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-02  
**Ground Surface Elevation (feet msl):**

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	30			IR02SH004005W	0	N		SM	Ground Surface
1									Well-sorted SILTY SAND: reddish black (10R 2.5/1); wet to saturated below 0.5 foot; loose; 80% fine sand; 20% silt; shell fragments present
2				IR02SH004025W	0				
3									Total depth of boring = 2.5 feet
4									
5									
6									
7									
8									
9									
10									
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**IR-12 BORING LOGS**

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Tetra Tech EM Inc.

### Log of Boring: IR12B037

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/28/02  
**Completed:** 08/28/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 8.45

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B037020	0			SM	Ground Surface SILTY SAND: light yellowish brown (2.5Y 6/3); dry; fine to medium sand; with occasional fine gravel, organics, twigs, and roots; appears to be fill material
1			IR12B037100	0			SM	Color changes to grayish green (Gley1 5/2 5G); moisture content increases to moist; sand becomes fine to coarse; with olive yellow and dark bluish gray mottling
2								Same as above, with occasional laminated sandy silt layers (up to 3 inches thick)
3								Color changes to dark bluish gray (Gley 2 3/1 5PB); moisture content increases to wet; with grayish green and olive yellow mottling
4	36			0				Same as above
5								
6								
7								
8	24			0				Same as above
9								
10								Total depth of boring = 10 feet
11								
12								
13								
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Tetra Tech EM Inc.

### Log of Boring: IR12B038

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 9.13

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B038020	0			SM	Ground Surface SILTY SAND WITH GRAVEL: light olive brown (2.5Y 5/3); dry; fine to coarse sand; fine gravel; with occasional organics, twigs, and roots; organic odor-mottled wood fragments at 1.5 feet; appears to be fill material
1			IR12B038100	0			ML	SANDY SILT: pale green (Gley1 6/2 5G); dry; fine to coarse sand; trace fine gravel; with occasional laminated, fine to medium sand layers (up to 3 inches thick)
2								
3							CL	Same as above, with dark gray mottling SANDY CLAY: dark gray (5Y 4/1), with olive yellow mottling; moist; fine to coarse sand; with occasional fine gravel
4	48							
5							CL	Same as above
6								
7							CL	Moisture content increases to wet; with pale green mottling; material is made up of weathered serpentinite
8	24							
9								
10								Total depth of boring = 10 feet
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Tetra Tech EM Inc.

### Log of Boring: IR12B039

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 9.26

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B039020	0			SM	Ground Surface SILTY SAND WITH GRAVEL: light gray (5Y 7/1); dry; fine to coarse sand; fine gravel; with occasional zones of coarse gravel; appears to be fill material
1			IR12B039100	0			ML	SANDY SILT: dark greenish gray (Gley 1 4/1 10Y), with grayish green mottling; dry; medium plasticity, fine to coarse sand; occasional fine gravel  Color changes to pale green (Gley1 6/2 5G); small zone of coarse gravel at 4.5 feet  Color changes to dark greenish gray (Gley1 4/1 10Y)  Same as above, with a layer of fractured gravel from 6.6 to 6.9 feet  Same as above  Color changes to dark gray (Gley 1 4/N); moisture content increases to moist; with grayish green mottling  Total depth of boring = 10 feet
2				0				
3				0				
4	48			0				
5				0				
6				0				
7				0				
8	24			0				
9				0				
10				0				
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Tetra Tech EM Inc.

### Log of Boring: IR12B040

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 9.39

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B040020	0			SM	Ground Surface SANDY SILT: olive (5Y 4/4), with pale yellow mottling; moist; fine to coarse sand; with occasional fine gravel and organic fragments
1			IR12B040100	0			ML	Sand becomes fine; with a dark reddish brown (5YR 3/3) layer from 1 to 1.5 feet Color changes to dark greenish gray (Gley 1 4/1 10Y), with pale green and yellow mottling; sand becomes fine to medium
2								
3								
4	18			0				Same as above
5								
6								Same as above
7								
8	24			0				Same as above
9								
10								Total depth of boring = 10 feet
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12								
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Tetra Tech EM Inc.

### Log of Boring: IR12B041

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 10.93

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B041020	0			ML	Ground Surface SILT: olive brown (2.5Y 4/3); moist; trace to little fine to medium, and coarse sand; with some organic twigs and roots; appears to be fill material
1			IR12B041100	0			SW	Poorly sorted SAND: yellowish red (7.5YR 5/8); moist; with trace to little silt
2							SM	SILTY SAND: dark greenish gray (Gley1 4/1 10Y); moist; fine to coarse sand; trace to little fine gravel; with some organic and wood fragments
3								Same as above, with some small layers of fractured, coarse gravel
4	48							Same as above
5								CLAY WITH GRAVEL: dark bluish gray (Gley 2 3/1 10B), with dark green mottling; moist; medium plasticity; fine to coarse gravel
6							CL	
7								Note: In initial boring, Geoprobe met refusal at 2.5 feet; the boring was relocated 2 feet southeast and completed at this location.
8								Total depth of boring = 10 feet
9	24							
10								
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Tetra Tech EM Inc.

### Log of Boring: IR12B042

**Drilling Method:** DIRECT-PUSH  
**Boring Started:** 08/29/02  
**Completed:** 08/29/02  
**Boring Depth (feet bgs):** 10.00  
**Boring Diameter (inches):** 2.00

**Logged By:** ROD REEVE  
**Logging Consultant:** MARRS  
**Drilling Company:** GREGG DRILLING

**Project:** PARCEL E STANDARD DATA GAPS  
**Project No:** DO19  
**Location:** IR-12  
**Ground Surface Elevation (feet msl):** 11.09

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0	48		IR12B042020	0			SM	Ground Surface
1			IR12B042020A	0				SILTY SAND WITH GRAVEL: olive brown (2.5Y 4/3); moist; fine to coarse sand; fine gravel; appears to be fill material
2			IR12B042100	0				Color changes to very dark grayish brown (10YR 3/2), possibly due to staining; with petroleum hydrocarbon odor
3								Color changes to dark greenish gray (Gley 1 4/1 10Y), with pale green and olive yellow mottling; some organics and wood fragments; no petroleum hydrocarbon odor below 2 feet
4	48			0				Color changes to pale green (Gley 1 6/2 5G)
5								Color changes to dark greenish gray (Gley 1 4/1 10G)
6								Same as above, with little clay
7								Same as above
8	24			0				Total depth of boring = 10 feet
9								
10								
11								
12								
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**APPENDIX J3**  
**SOIL BORING AND TEST PIT LOGS FOR NDGI**

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## LIST OF TEST PIT AND SOIL BORING LOGS<sup>a</sup>

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TPBWE08B	WE08	WE18A
TPBWE14	WE09	WE18B
TPBWE20B	WE10	WE18C
WE01	WE15	WE18D
WE02B	WE16	WE19A
WE03B	WE17A	WE19B
WE04B	WE17B	WE19C
WE05B	WE17C	WE20A
WE06A	WE17D	WE20B
WE06B	WE17E	WE21A
WE07B	WE17F	WE21B

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Note:

- a Only test pit and soil boring logs where soil samples were collected are included in this appendix. Complete test pit and soil boring logs are included in the final "Parcel E Nonstandard Data Gaps Investigation Landfill Lateral Extent Evaluation, Hunters Point Shipyard, San Francisco, California," dated October 29, 2004.



**Tetra Tech EM INC.**

### Log of Boring: TPBWE08B

**Drilling Method:** HSA  
**Boring Started:** 04/02/02  
**Completed:** 04/02/02  
**Boring Depth (feet bgs):** 22.00  
**Boring Diameter (inches):** 6.00

**Logged By:** VICTORIA COKER  
**Logging Consultant:** TETRA TECH  
**Drilling Company:** GREGG

**Project:** PARCEL E NONSTANDARD DATA GAPS  
**Project No:** G9016.003  
**Location:** PARCEL E IR-01/21 LANDFILL  
**Ground Surface Elevation (feet MSL):** 17.09

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0									Ground Surface
1	7				0			GP	POORLY GRADED GRAVEL WITH SAND: 60 percent gravel; 40 percent brown sand; few brick fragments
2					0				
3	0				0				
4	18				0				
5	18			W32W001	0			WF	WASTE FILL: dark yellowish brown (10YR 4/6) silty sand; 40 percent gravel; waste fill made of rubber, brick, metal, paper, plastic, tile, and wood
6	18				0				Color changes to dark greenish gray with blue tints (sand)
7	14				0				Serpentinite gravels present.
8	4								
9	4								
10	5								
11	3								
12	7								
13	7								
14	0								
15	9								
16	13								
17	13								
18	13								
19	16			W32W002					
20	16								
21	11								
22									Total Depth of Boring = 22 Feet
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									



**Tetra Tech EM INC.**

### Log of Boring: TPBWE14

**Drilling Method:** HSA

**Boring Started:** 04/02/02

**Completed:** 04/02/02

**Boring Depth (feet bgs):** 20.00

**Boring Diameter (inches):** 6.00

**Logged By:** VICTORIA COKER

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

**Project:** PARCEL E NONSTANDARD DATA GAPS

**Project No:** G9016.003

**Location:** PARCEL E IR-01/21 LANDFILL

**Ground Surface Elevation (feet MSL):** 8.10

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0									Ground Surface
1	14	68			0			CL	LEAN CLAY: brown (10YR 4/3); with brick and gravel up to 2.5-inch diameter
2	5	50			0			GP	POORLY GRADED GRAVEL WITH SAND: black; 80 percent gravel; occasional wood debris
3					0				
4	16	13			0				
5	0	NR			0				
6					0				
7	7	17			0				
8	7	23			0				
9	7	50			0				
10					0			WF	WASTE FILL: wood plastic, cloth, and metal debris; with coarse black sand
11	5	50			0				
12					0				
13	7	47			0				
14	9	83			0				
15					0				
16	14	NR		W33W001				SC	CLAYEY SAND: saturated with petroleum
17	18	NR						CH	BAY MUD: with wood debris and metal and shell fragments; petroleum staining
18									
19	18	NR							
20									Total Depth of Boring = 20 Feet
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
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**Tetra Tech EM INC.**

### Log of Boring: TPBWE20B

**Logged By:** VICTORIA COKER  
**Logging Consultant:** TETRA TECH  
**Drilling Company:** GREGG

**Project:** PARCEL E NONSTANDARD DATA GAPS  
**Project No:** G9016.003  
**Location:** PARCEL E IR-01/21 LANDFILL  
**Ground Surface Elevation (feet MSL):** 13.59

**Drilling Method:** HSA  
**Boring Started:** 04/01/02  
**Completed:** 04/01/02  
**Boring Depth (feet bgs):** 19.00  
**Boring Diameter (inches):** 6.00

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	BLOW COUNTS	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	USCS SOIL TYPE	DESCRIPTION
0									Ground Surface
1	14	10			0			CL	LEAN CLAY WITH GRAVEL: dark brown (10YR 3/3); 20 percent gravel, up to 2-inch diameter
2					0				
3	18	20			0				
4	18	21			0				
5	7	29			0			SC	CLAYEY SAND: black (10YR 2/1); 5 percent subangular gravel, up to 0.5-inch diameter; wood debris
6					0				
7	13	50			0			GP	POORLY GRADED GRAVEL.
8					0				
9	14	50			0			SP	POORLY GRADED SAND WITH GRAVEL: saturated; 30 percent gravel, up to 1.5-inch diameter; wood debris; petroleum staining
10	16	47			0				
11	7	56			0				
12					0				
13	11	50			0				
14					0				
15	11	50			0				
16	18	50		W31W001	0				
17									
18	4	12						CH	BAY MUD: fat clay; with shell fragments
19									Total Depth of Boring = 19 Feet
20									
21									
22									
23									
24									
25									
26									
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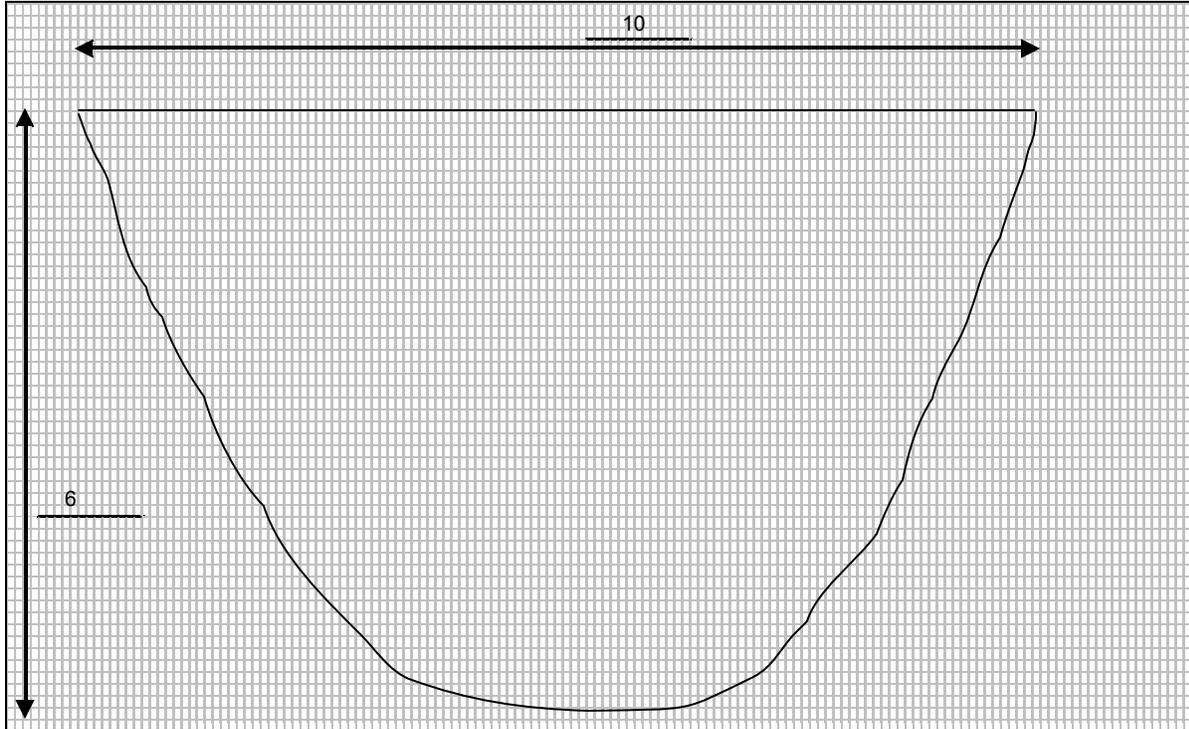
## **ACRONYMS AND ABBREVIATIONS**

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bgs	Below ground surface
ERRG	Engineering Remediation Resources Group
GT	Gas Tech
HSP	Hunters Point Shipyard
IR	Installation Restoration
LEL	Lower explosive limit
MS/MSD	Matrix spike/matrix spike duplicate
OVA	Organic vapor analyzer
ppm	Parts per million
PVC	Polyvinyl chloride
TPH-e	Total petroleum hydrocarbons as extractables
UCSF	University of California, San Francisco
VOC	Volatile organic compound

# TEST PIT LOG WE01

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 6
Type of Equipment:	CAT 320B	Depth to Water (feet): 6



### Soil Description:

- 0-1 feet Clay, brownish; 1.1 VOCs, 60 ppm methane
- 1-2 feet Bluish gray soil; trash; 140 ppm at soil pile; 6.9 VOCs
- 3-4 feet Bluish gray, some greenish color, hit water at 6 feet; 880 ppm

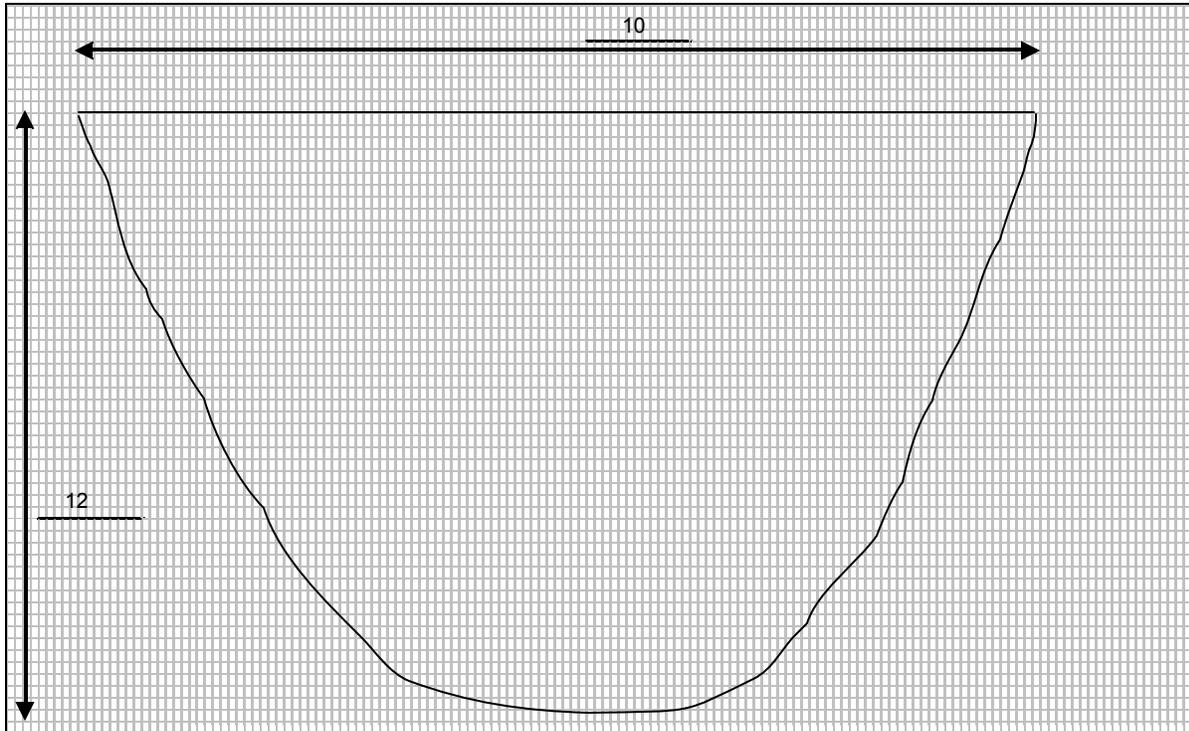
### Notes:

Photograph: looking north at 4 feet.

Samples: W26W001 (4 feet), additional jar for TPH-e, and W26W002, MS/MSD.

# TEST PIT LOG WE02B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 12
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

- 0-1 feet Silty clay backfill topsoil; reddish brown
- 1-2 feet Gravel backfill; 10 percent trash; 160 ppm
- 2-3 feet Light gray sand; 40 percent gravel backfill; 400 ppm; 3 feet - purplish stain, stain looks like chemical dye; visible methane escaping; 360 ppm; large rock against fence at about 3 to 4 feet
- 4 feet 2,800 ppm; more visible off-gassing or dust from concrete; 8 percent LEL at north side pit opening
- 6-8 feet Bluish gray greenish color; 2.3 VOCs; 4 percent LEL ambient soil
- 10-12 feet Bluish gray color, 40 to 50 percent gravel, sweet odor, not petroleum, not methane; 5 percent LEL

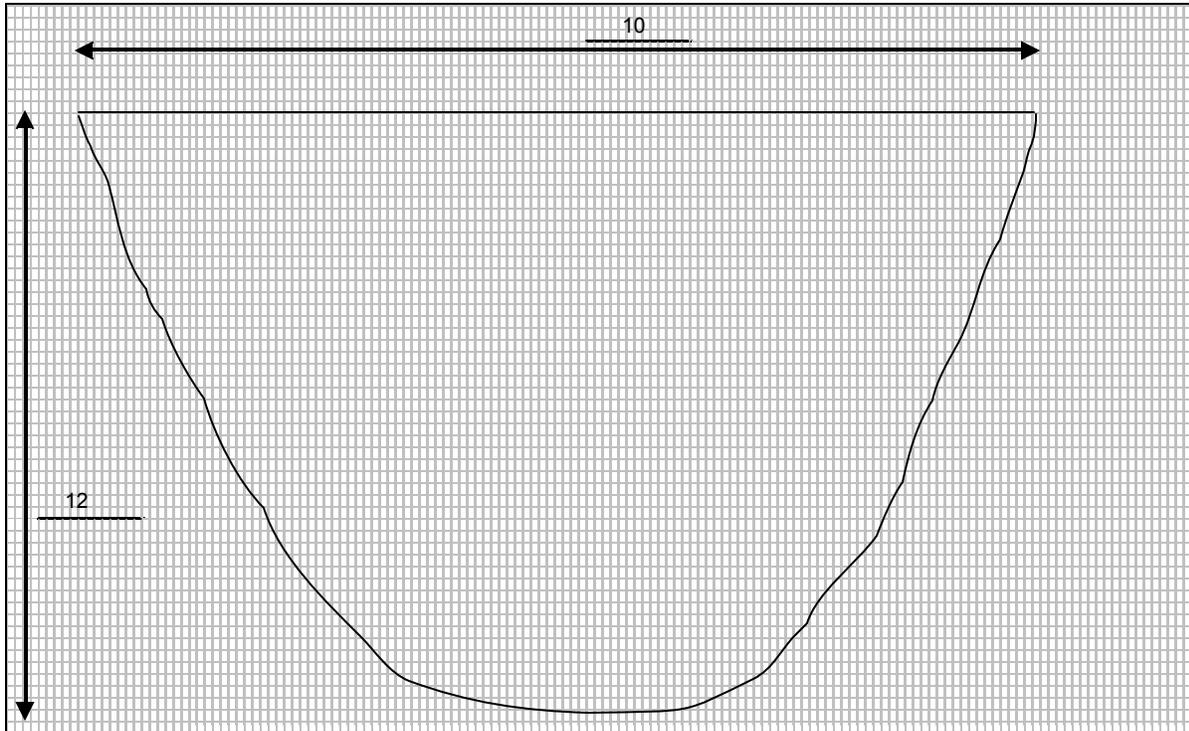
### Notes:

Photograph: one photograph looking north.

Samples: W25W001B (4 feet) collected at 0855, additional jar for TPH-e, and W25W002B (12 feet) collected at 0910, additional jar for TPH-e. Test pit located right along fence. Liquid seeping off western side of trench at 2 to 3 feet. No odor, no VOCs found at point of seepage.

## TEST PIT LOG WE03B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 12
Type of Equipment:	CAT 320B	Depth to Water (feet):



**Soil Description:**

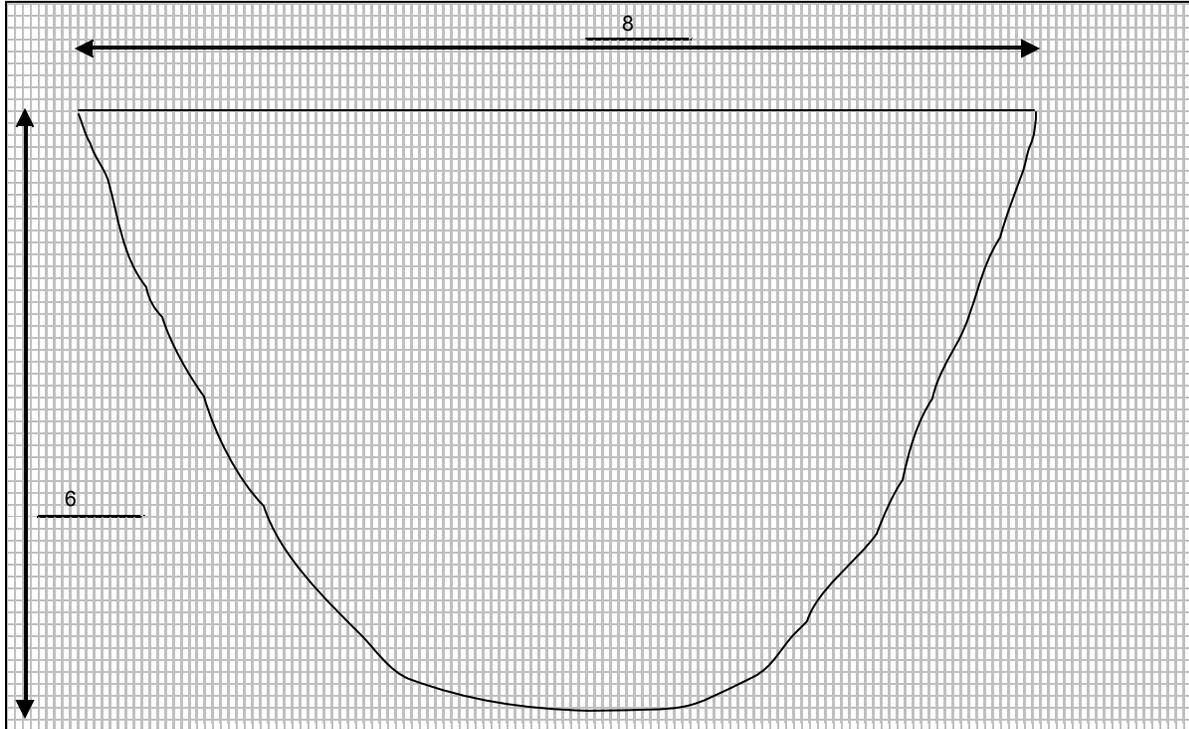
- 0-2 feet Silty clay backfill topsoil; organic roots, brownish gray color; 2 feet - gravel backfill, hard gravel, 10 percent debris, bluish gray tint
- 3 feet 1,500 ppm, 1 percent LEL
- 4 feet Wood debris; large asphalt concrete; 600 ppm, 1 percent LEL
- 4-6 feet Blue tinted sand with 40 percent gravel; 1 percent LEL
- 8 feet 3 percent LEL at soil; 2.2 VOCs on pile; 700 ppm methane
- 10 feet 40 percent gravel, 5 percent debris, light bluish gray color
- 10-12 feet 10 percent debris, 40 percent gravel; 3 percent LEL

**Notes:**

Photographs: North at 4 feet, north at 10 to 12 feet, and two photographs south at 10 to 12 feet.  
 Samples: W24W001 (4 feet) at 0800, and W24W002 (12 feet) at 0810, additional jar for TPH-e. Debris stops 4 feet from the fence.

# TEST PIT LOG WE04B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/20/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/20/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 8
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 6
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

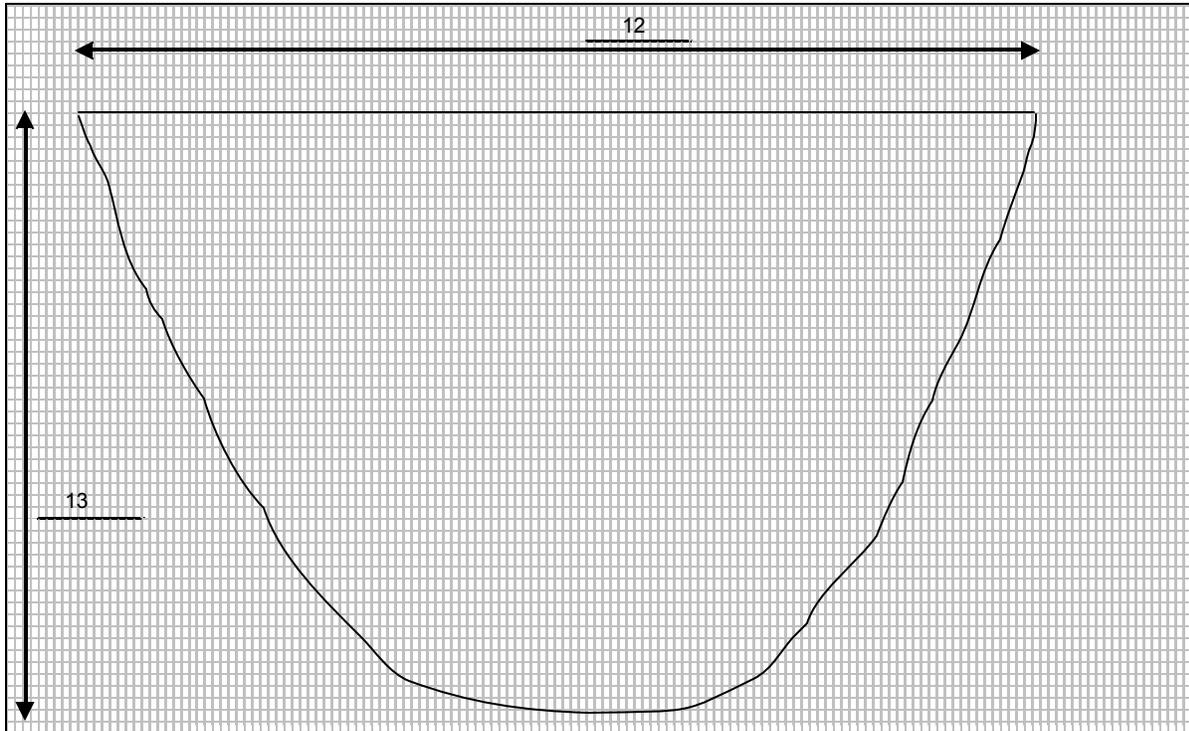
- 0-2 feet Clay backfill; below 2 feet - gravel, wood, paper, and metal debris; about 80 percent in front half of test pit; most debris stops about 4 feet from fence; 180 ppm methane, 0 ppm VOCs
- 4 feet Bluish gray color, about 80 to 90 percent debris; 2 feet from fence line debris is about 3 feet deep

### Notes:

Sample: W23W001 (4 feet).

# TEST PIT LOG WE05B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/20/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/20/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 13
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

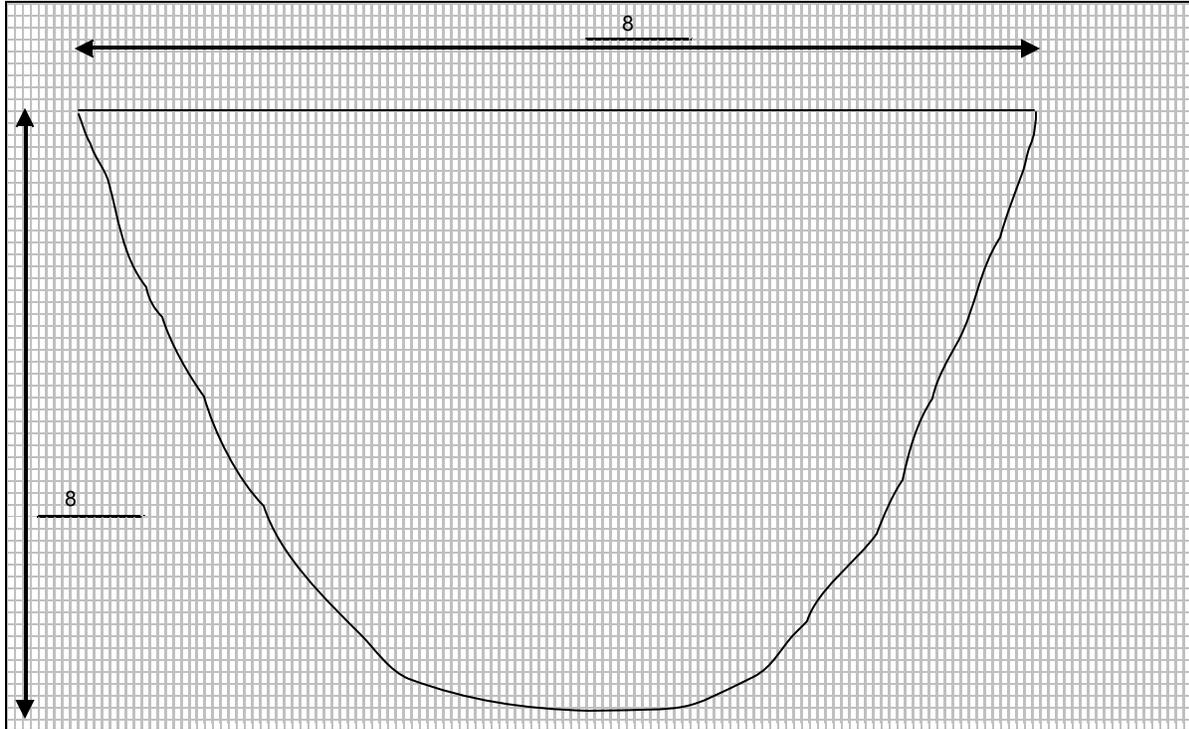
2 feet	Wood debris
2-3 feet	Silty clay with black staining; wood debris encountered between 2 to 3 feet
3-4 feet	60 ppm, 0.07 ppm VOCs
4-6 feet	500 ppm methane, 1.1 ppm VOCs
6 feet	1 percent LEL, 900 ppm methane
8-10 feet	160 ppm methane
13 feet	Sandy soil, 50 percent gravel, 10 percent debris; 100 ppm methane, 2.2 ppm VOCs, opening of pit, debris zone stops about 14 feet from fence except for minor concrete debris

### Notes:

Samples: W20W001 (4 feet) and W20W002 (13 feet).

# TEST PIT LOG WE06A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/20/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/20/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 8
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 8
Type of Equipment:	CAT 320B	Depth to Water (feet): 5



### Soil Description:

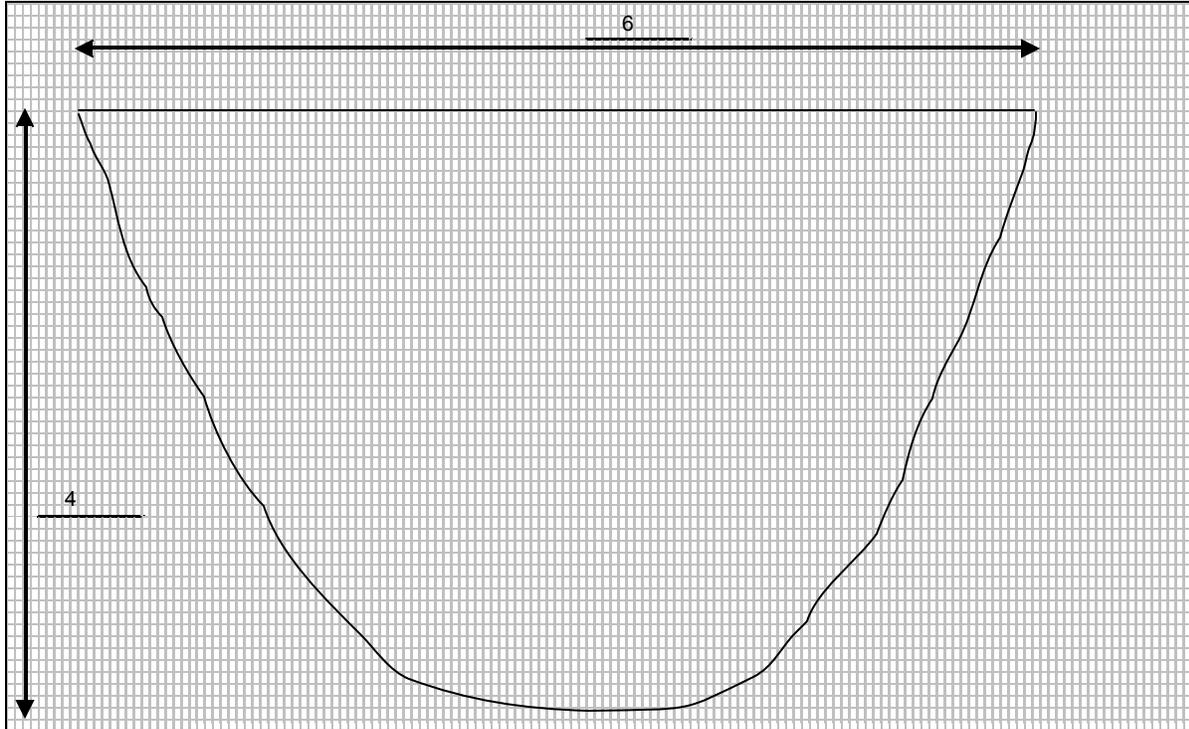
- 2-3 feet Silty clay; strong methane odor; 40 ppm; 300 ppm at 3 feet
- 4 feet Wood, gravel debris, 30 percent gravel fill; 1,200 ppm methane, 2 percent LEL
- 6 feet Staining of clay; 460 ppm methane
- 8 feet Clay, gravel fill

### Notes:

Samples: W22W001 (4 feet) and W22W002 (8 feet).

# TEST PIT LOG WE06B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 6
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 4
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

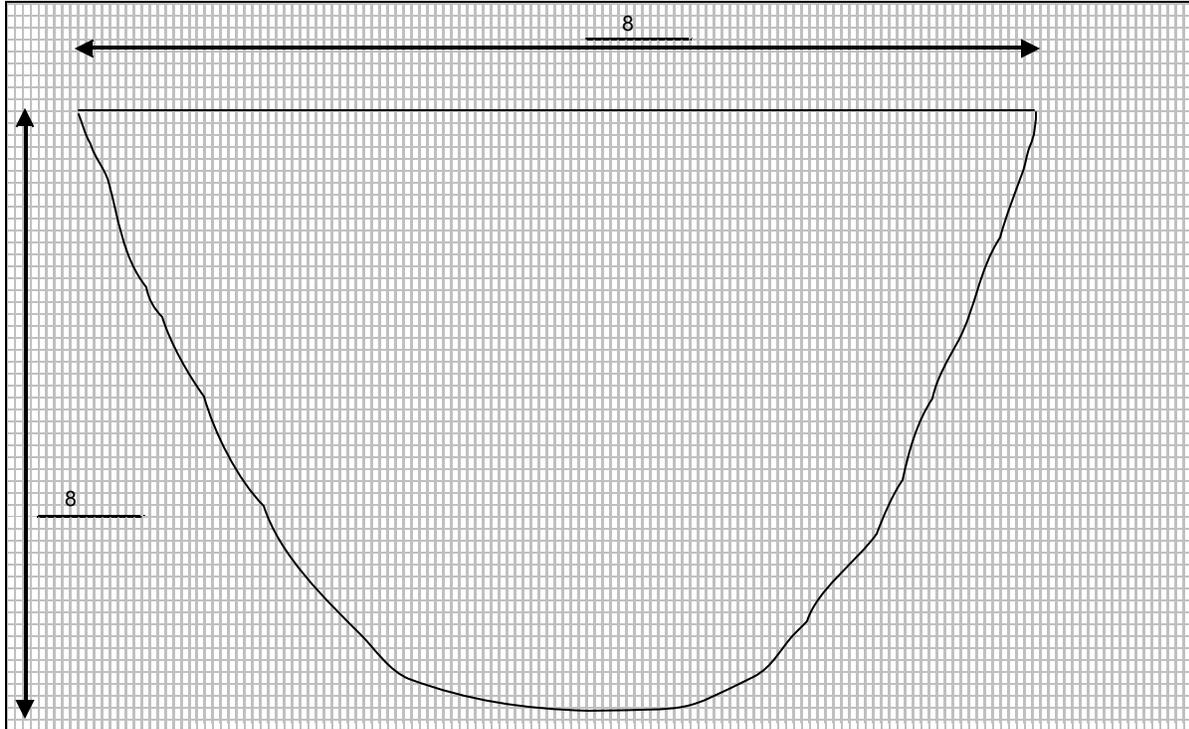
- 0-1 feet Reddish brown gravel backfill, about 30 percent trash
- 2-3 feet Reddish brown; 30 percent trash, at 3 feet water seepage, 100 ppm; 0 ppm VOCs, 0 ppm VOCs ambient
- 4 feet Refusal

### Notes:

Sample: W30W001 (4 feet) at 1510.

# TEST PIT LOG WE07B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/20/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/20/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 8
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 8
Type of Equipment:	CAT 320B	Depth to Water (feet): 4



### Soil Description:

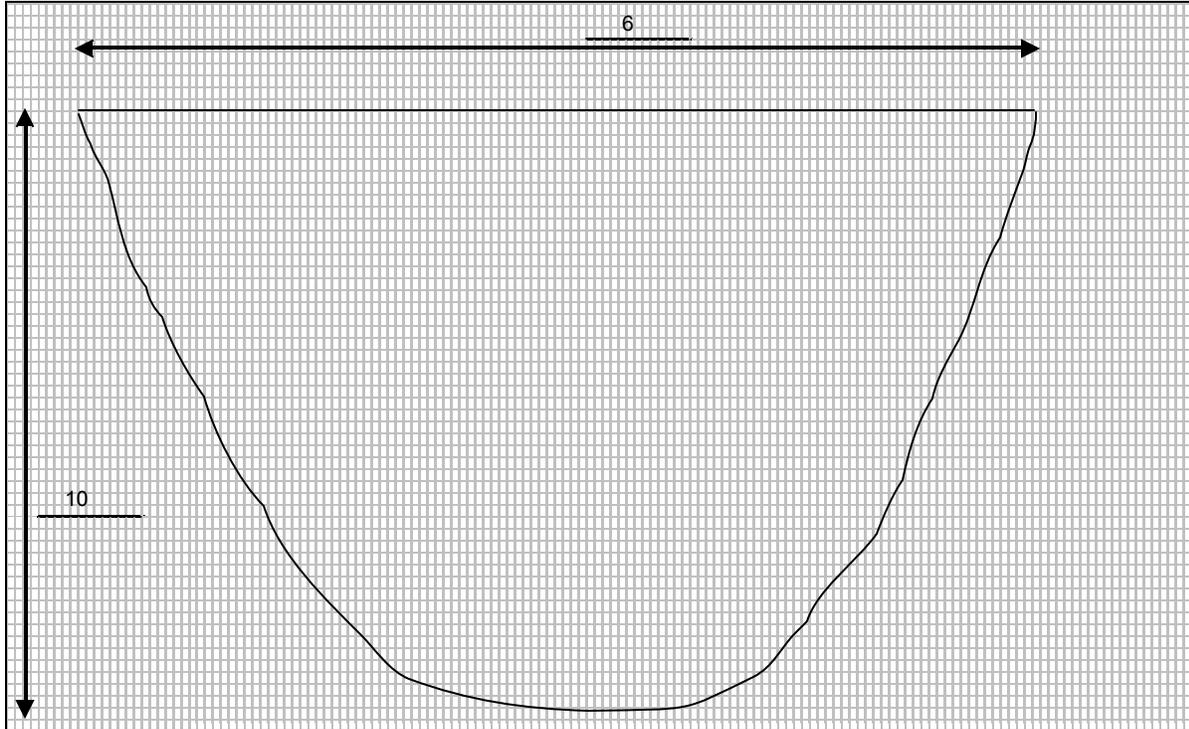
0-3 feet Silty clay, 30 percent wood and metal debris; 100 ppm at 3 feet  
5 feet More wood debris; 400 ppm  
8 feet Bluish-stained soils

### Notes:

Samples: W21W001 (8 feet) collected at 1325, and W21W002 (4 feet) collected at 1330. Debris ends before the north end of the pit.

# TEST PIT LOG WE08

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/13/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/13/2002
Geologist/Engineer:	ANTHONY TALMANTEZ	Length (feet): 6
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 10
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

4 feet Gas readings 0 ppm, 0 percent LEL in ambient, soil pile, and at mouth of pit; northern end has 20 percent concrete rubble in soil; southern end has brick, paper, concrete rubble (2 to 4 feet); below 4 feet, soil was stained with petroleum odor but had no debris

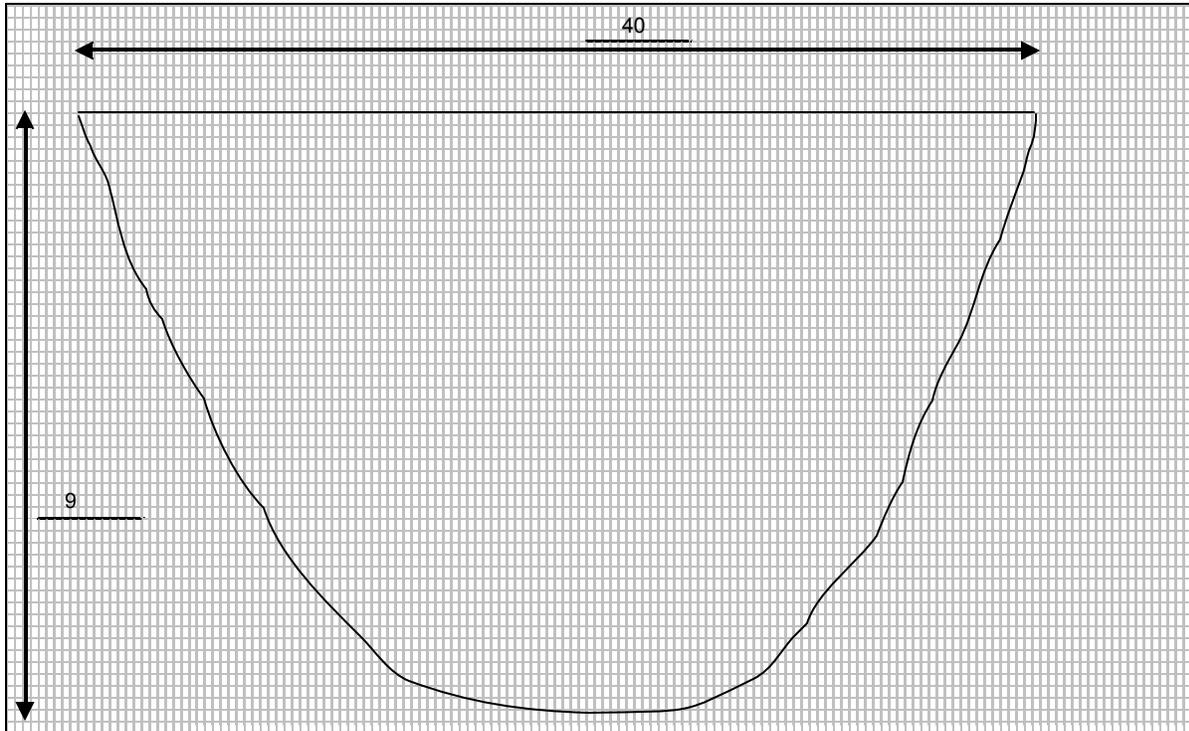
### Notes:

Photographs: pit, soil pile, and backfill.

Sample: W03W001 (4 feet).

# TEST PIT LOG WE09

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/13/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/13/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 40
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 9
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

0-9 feet Trench 40 feet long; north end has bricks; middle section and southern has 50 percent concrete rubble; silty sand fill material; slight petroleum odor; 0 ppm, 0 percent LEL in hole and soils pile

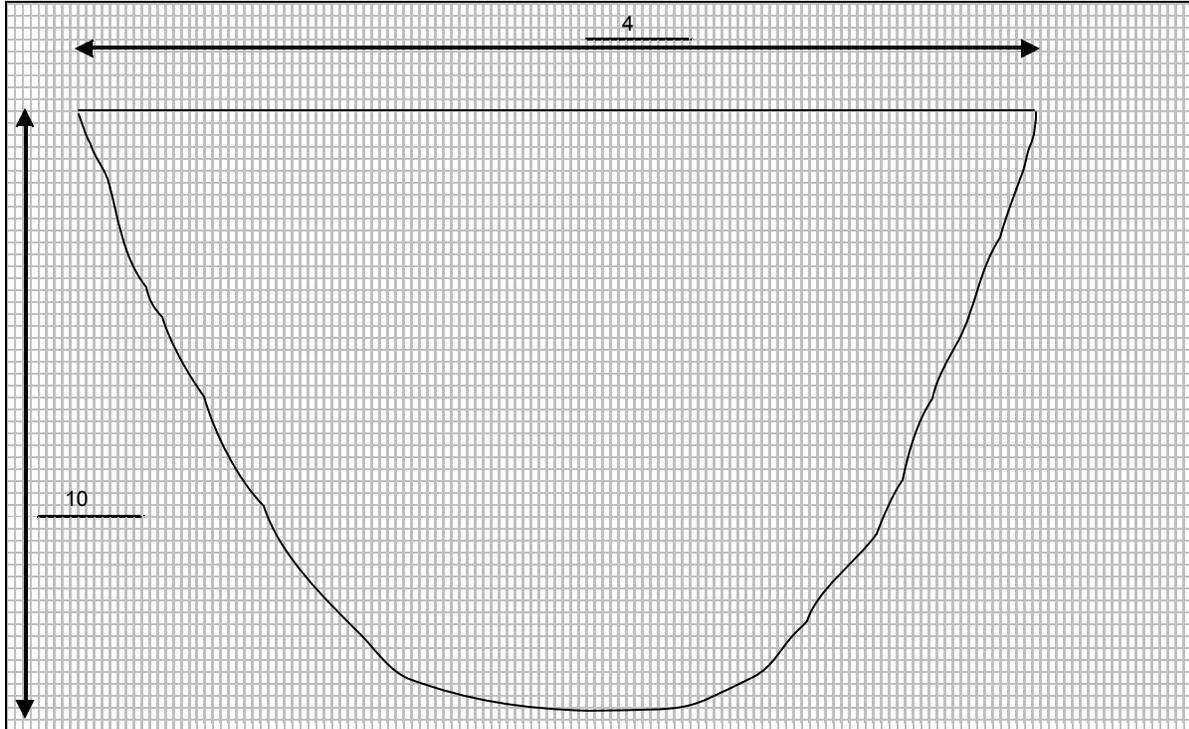
### Notes:

Photographs: soil pile and backfill.

Samples: W02W001 (4 feet), and W02W002 (9 feet), collected next to landfill, southern end of trench.

# TEST PIT LOG WE10

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/13/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/13/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 4
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 10
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

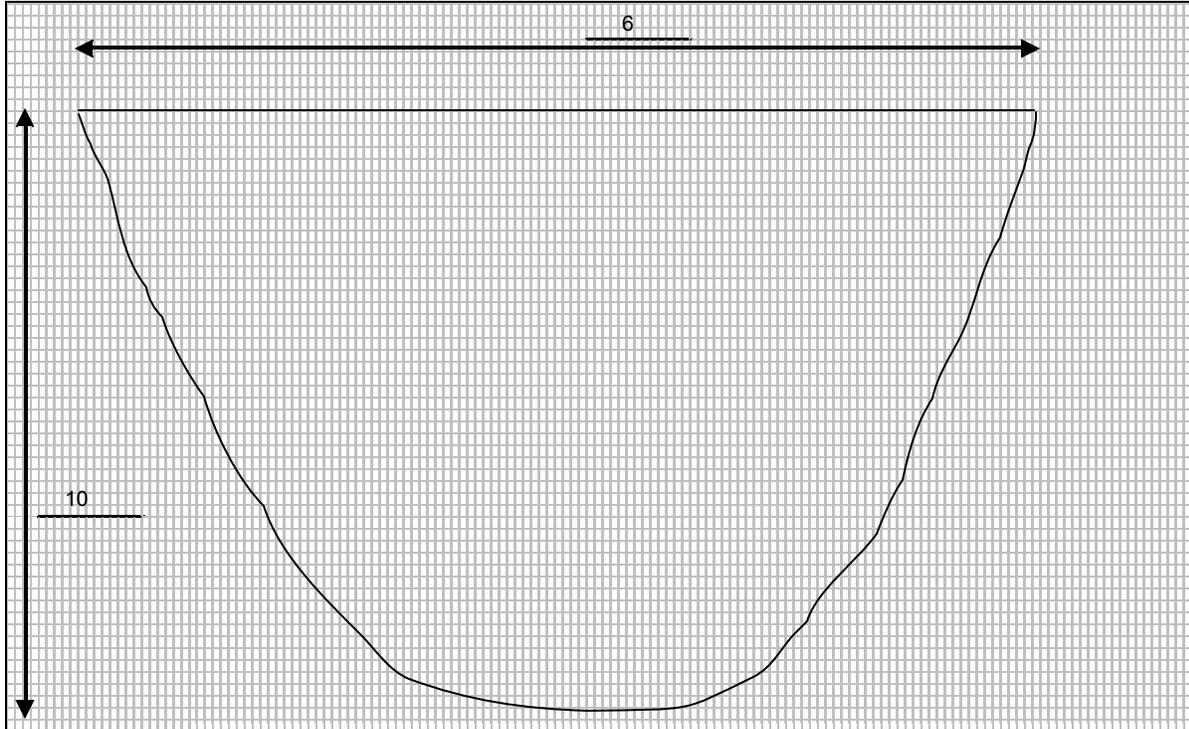
0-1 foot	Flat concrete slab
1-10 feet	Silty sand; some petroleum odor

### Notes:

Photographs: concrete slab and sign of test pit.  
Samples: W01W001 (4 feet) and W01W002 (10 feet).

# TEST PIT LOG WE15

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/14/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/14/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 6
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 10
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

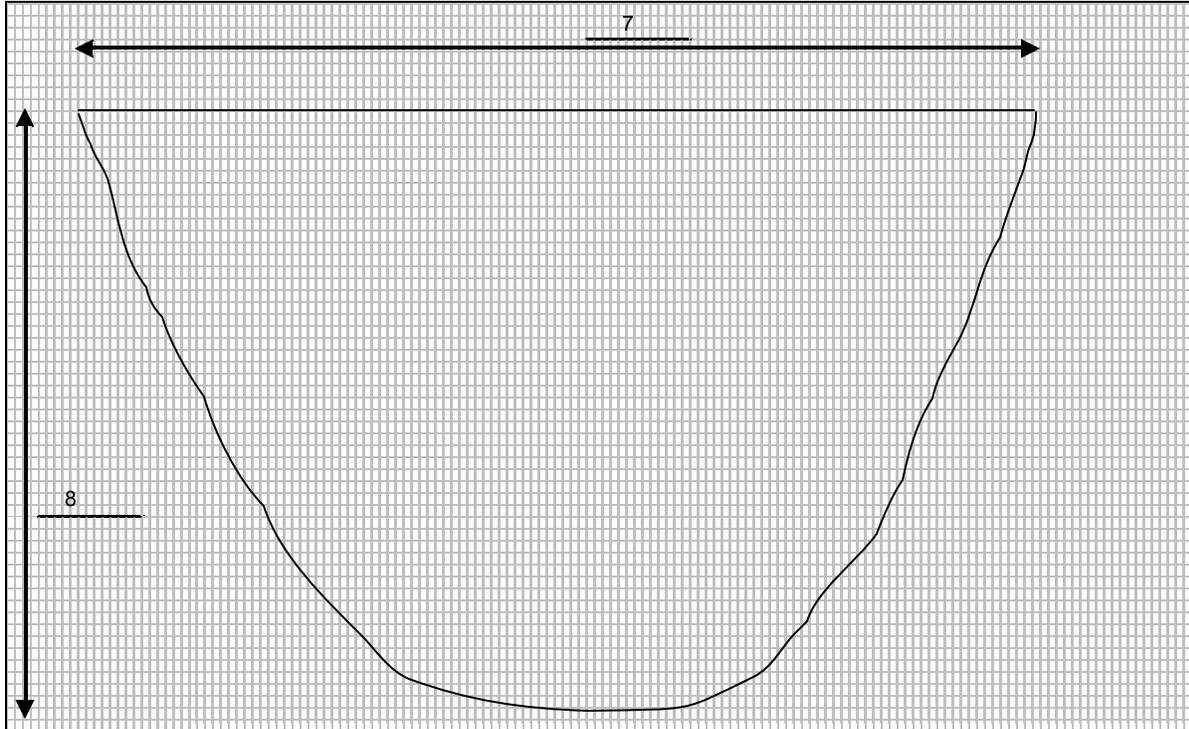
0-10 feet Dark decaying organic matter, saturated clayey sands; no debris; no detections:  
hydrogen sulfide, chlorine; heavy saturated soil

### Notes:

Samples: W05W001 (4 feet) and W05W002 (10 feet).

# TEST PIT LOG WE16

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/14/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/14/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 7
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 8
Type of Equipment:	CAT 320B	Depth to Water (feet): 7



### Soil Description:

0-8 feet Soil with some concrete blocks; no gas detected (organics or chlorine); no petroleum staining or odor

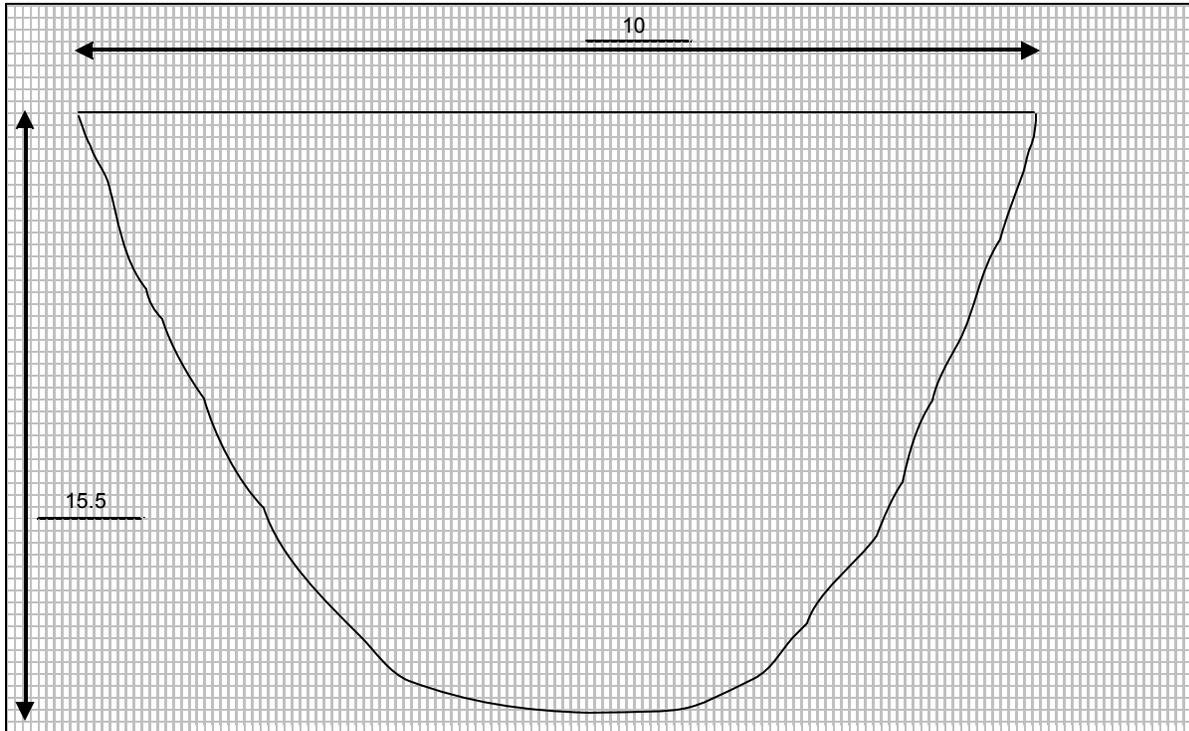
### Notes:

Photographs: test pit, profile.

Samples: W04W001 (4 feet) and W04W002 (8 feet).

# TEST PIT LOG WE17A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 15.5
Type of Equipment:	CAT 320B	Depth to Water (feet): 15.5



### Soil Description:

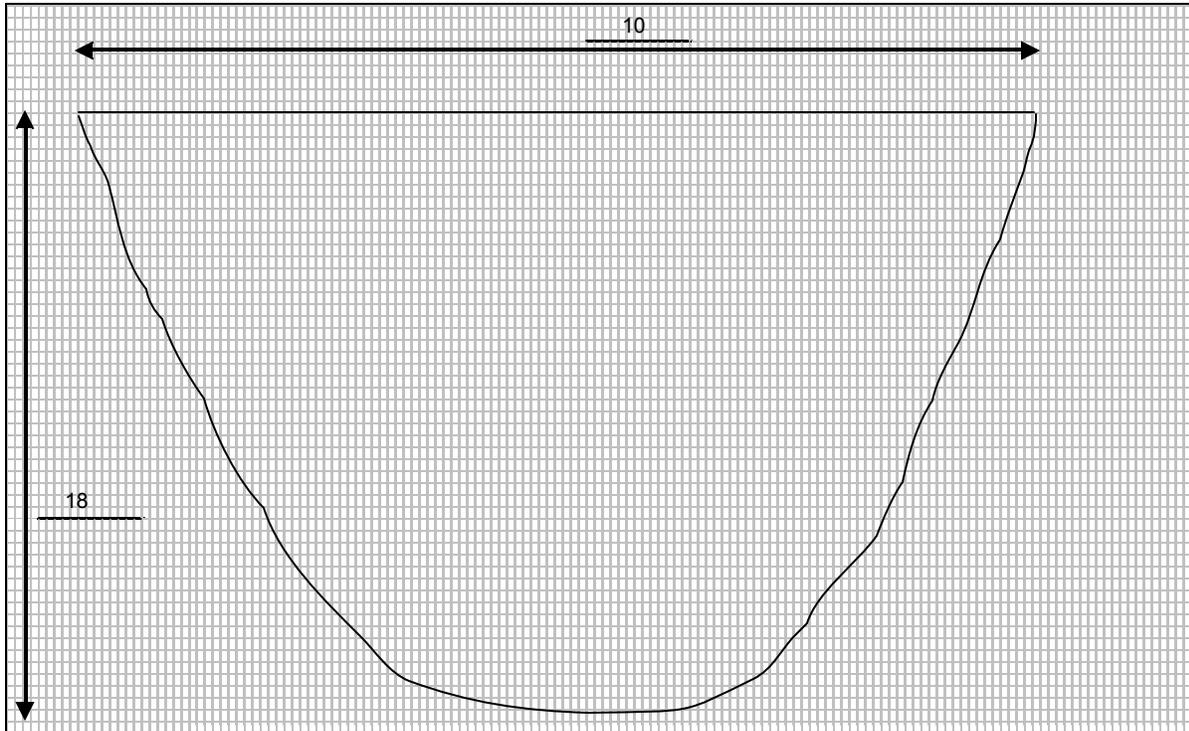
- 12 feet Reddish brown silty clay; organic odor below 12 feet
- 15 feet Encountered water table at 15.5 feet; hit what seems to be concrete and/or asphalt; refusal at 17 feet

### Notes:

Sample: W06W001 (15.5 feet).

# TEST PIT LOG WE17B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	ANTHONY TALAMANTEZ	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 18
Type of Equipment:	CAT 320B	Depth to Water (feet): 18



### Soil Description:

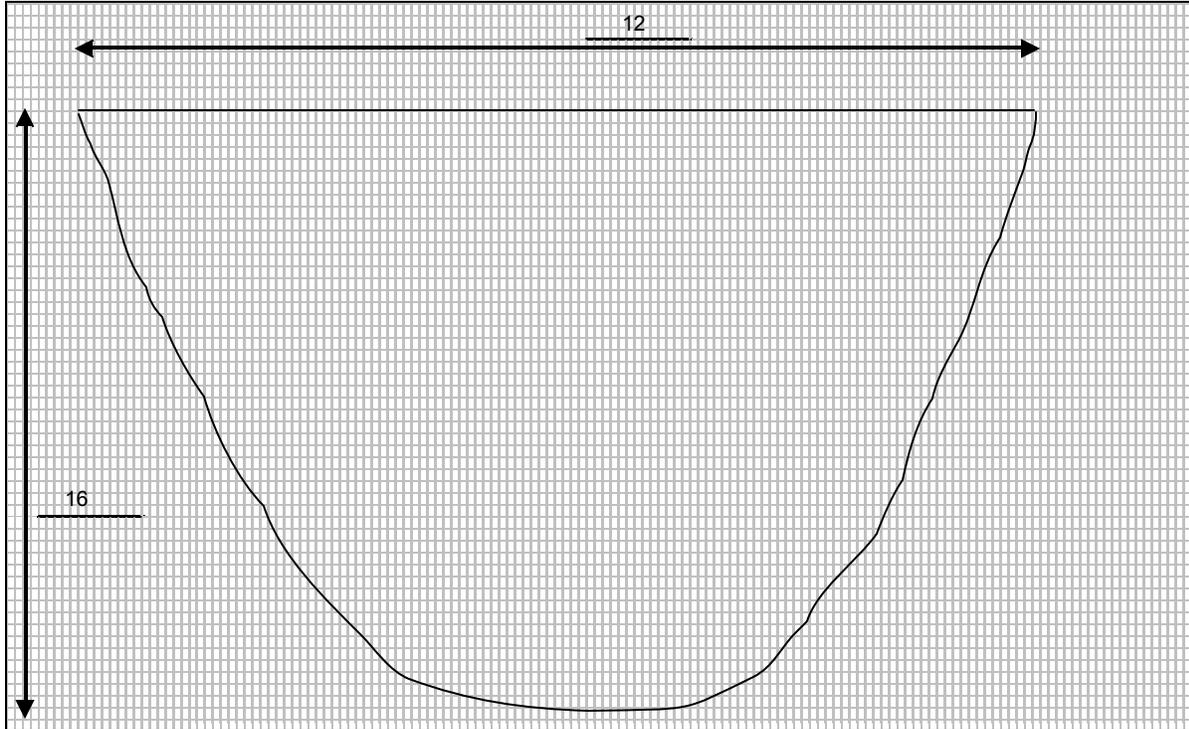
- 16 feet Petroleum staining and odor but no detections on meters; at 18 feet, 5 to 10 percent wood debris
- 4 feet Brick, gravel, and silty clay; large debris in clean fill
- 6-8 feet Small metal debris; wood debris at 8 feet

### Notes:

Sample: W07W001 (4 feet) and W07W002 (18 feet).

# TEST PIT LOG WE17C

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 16
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

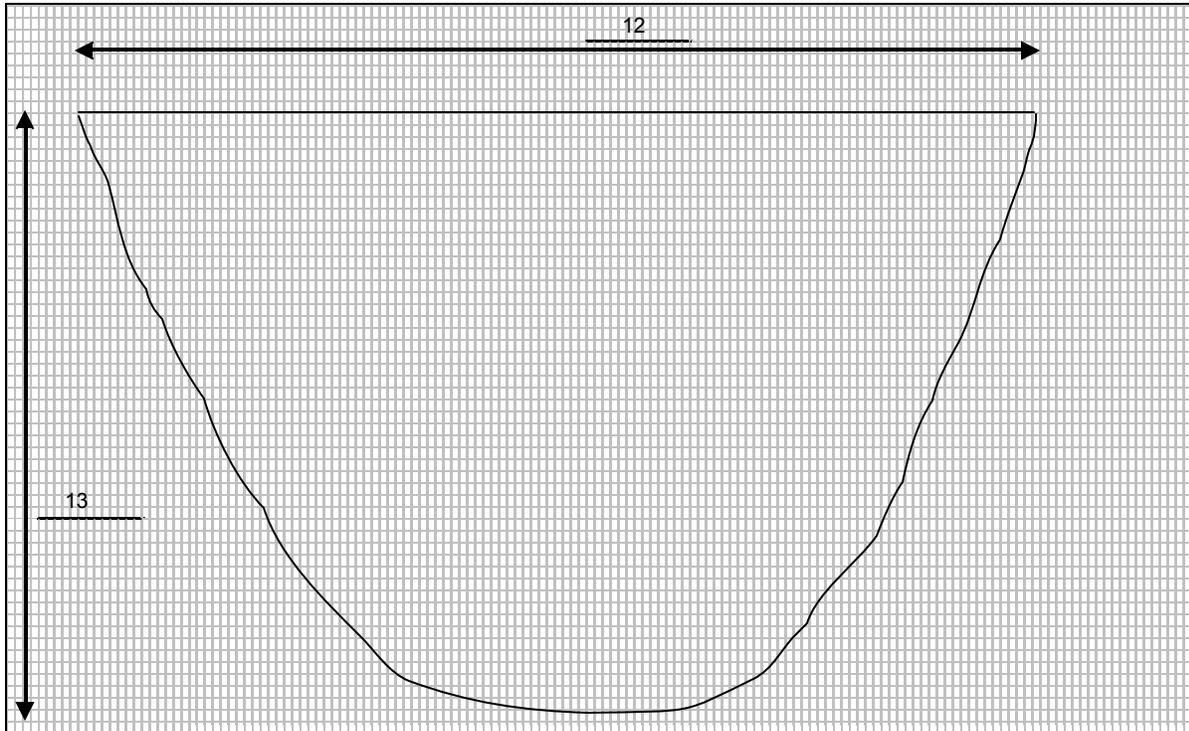
- 0-3 feet Large concrete debris in clean fill; 10 percent light gravel
- 14 feet Small pieces of metal scraps; slight petroleum odor
- 16 feet Stronger odor and stained soil; concrete boulders (about 1 foot in diameter) and wood debris at 14 to 16 feet

### Notes:

Sample: W08W001 (4 feet).

# TEST PIT LOG WE17D

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 3
Method:		Depth (feet): 13
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

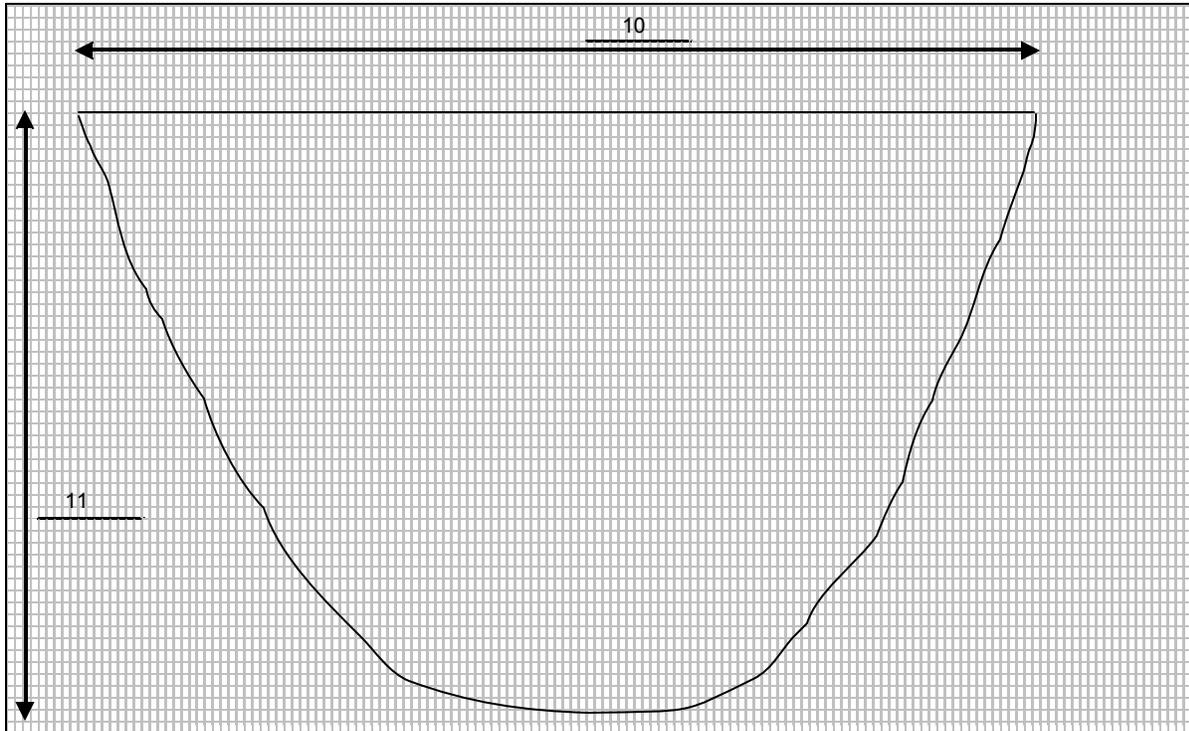
- 0-4 feet 30 percent gravel, increasing with depth; metal pipe 6 inches in diameter, 5 feet long; other miscellaneous metal debris; 3 feet PVC pipe
- 12 feet Staining
- 12.5 feet Concrete block
- 13 feet Refusal

### Notes:

Sample: W09W001 (5 feet) and W09W002 (13 feet).

# TEST PIT LOG WE17E

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 11
Type of Equipment:	CAT 320B	Depth to Water (feet): 10



### Soil Description:

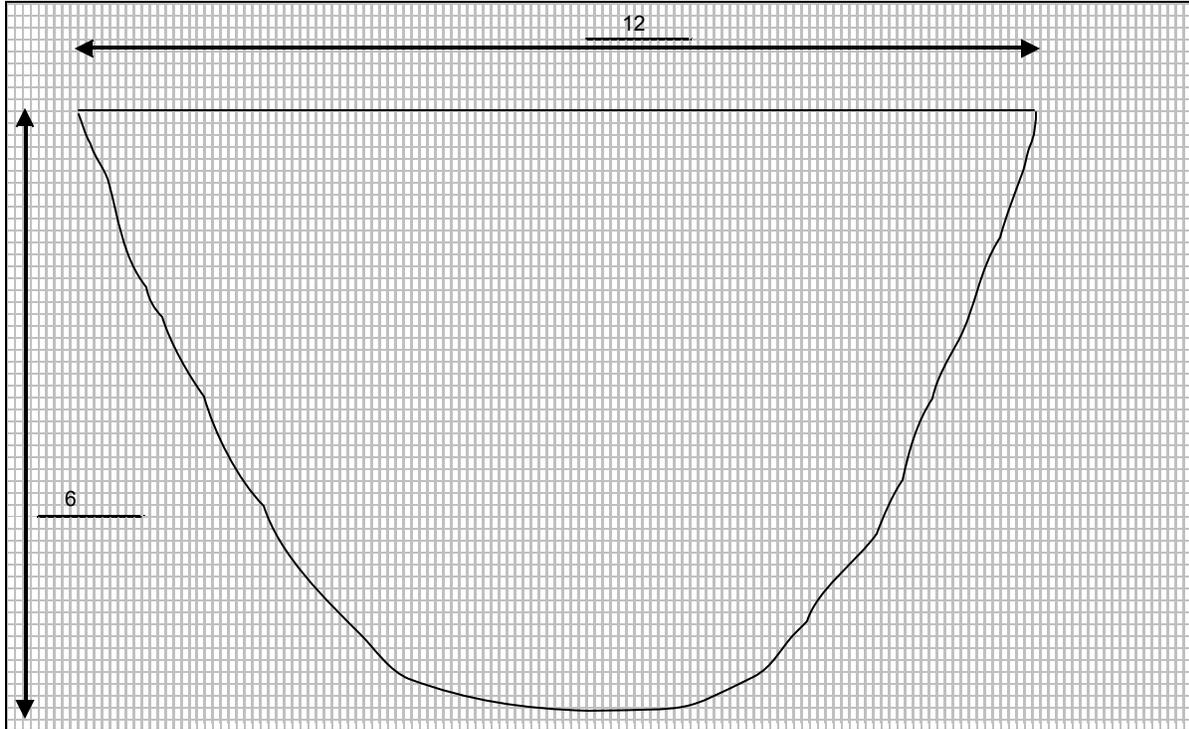
- 4-5 feet Large gravel fill; 10 percent small wood debris and asphalt (4 to 5 feet)
- 9 feet Large concrete blocks and saturated soils (no detections on meters); 30 percent metal debris
- 10 feet 50 percent wood debris and concrete blocks

### Notes:

Samples: W10W001 (5 feet) and W10W002 (11 feet).

# TEST PIT LOG WE17F

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 6
Type of Equipment:	CAT 320B	Depth to Water (feet): 6



### Soil Description:

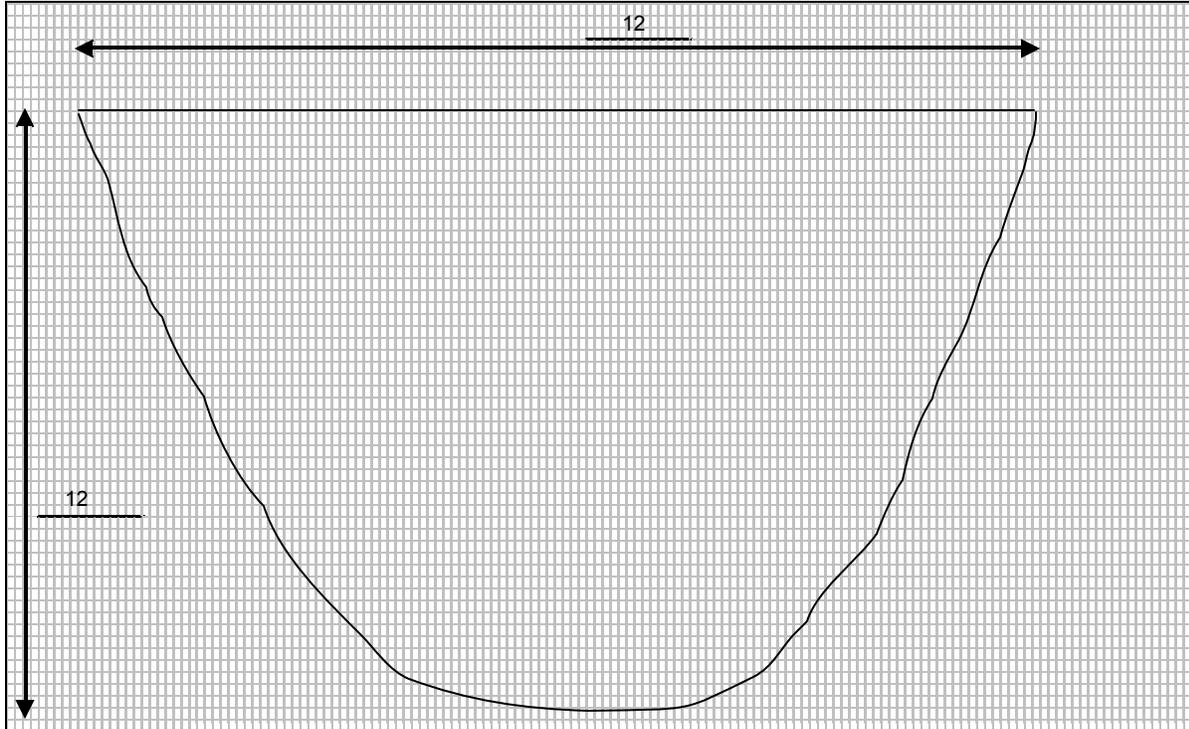
- 4 feet Large gravel fill; dark stained wet soils but no detections on meter, 60 to 70 percent gravel, large pieces of metal
- 6 feet Little brick and wood (less than 10 percent)

### Notes:

Samples: W11W001 (4 feet).

# TEST PIT LOG WE18A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 12
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

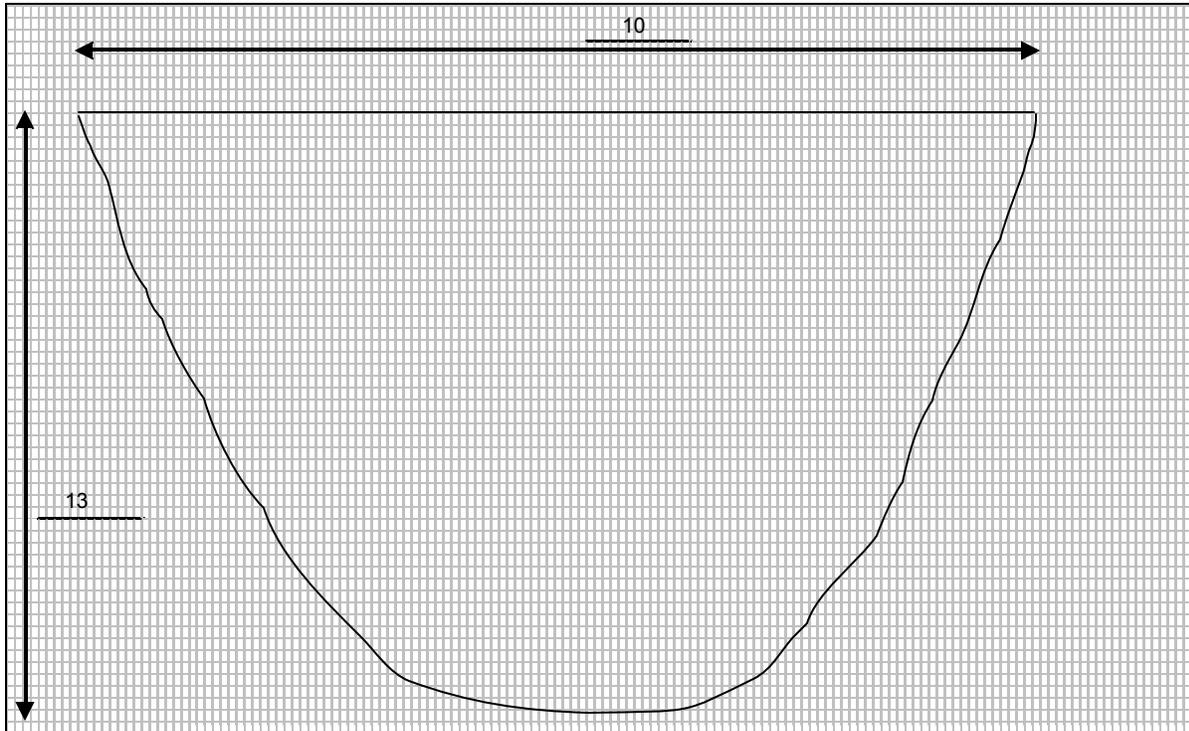
- 0-4 feet 5 percent brick debris, 40 ppm in soil pile; below 4 feet no brick debris; clayey sand
- 11 feet Black-stained soil; strong odor (not petroleum, more of a chemical smell)
- 12 feet 5 percent wood and metal debris (also plastic and rags), 20 percent gravel, remaining is black stained soil

### Notes:

Sample: W12W001 (12 feet).

# TEST PIT LOG WE18B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 13
Type of Equipment:	CAT 320B	Depth to Water (feet): 13



### Soil Description:

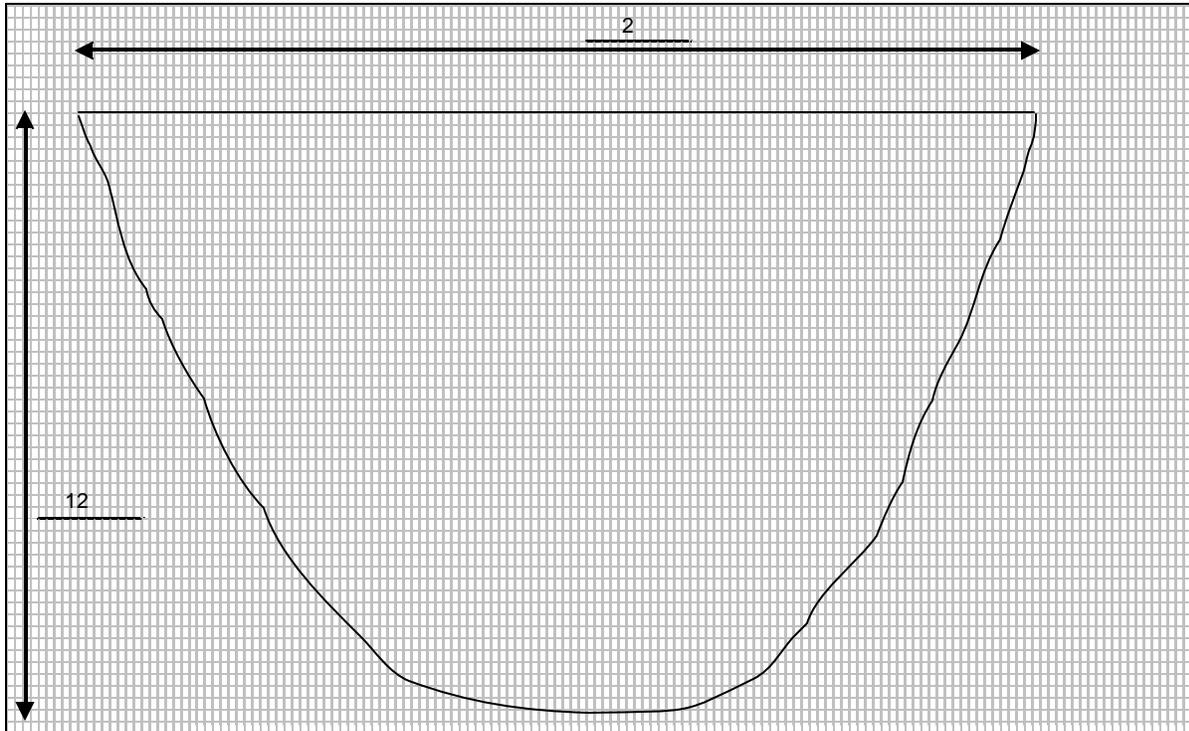
- 0-6 feet Metal, 10 percent plastic bricks; silty clay with 30 percent gravel; 20 ppm in ambient air at edge of trench, no readings at soil pile
- 8-13 feet 70 percent debris (wood, tire, metal, plastic) and strong methane odor; 80 ppm at 8 feet

### Notes:

Sample: W13W001 (13 feet).

# TEST PIT LOG WE18C

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 2
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 12
Type of Equipment:	CAT 320B	Depth to Water (feet): 10



### Soil Description:

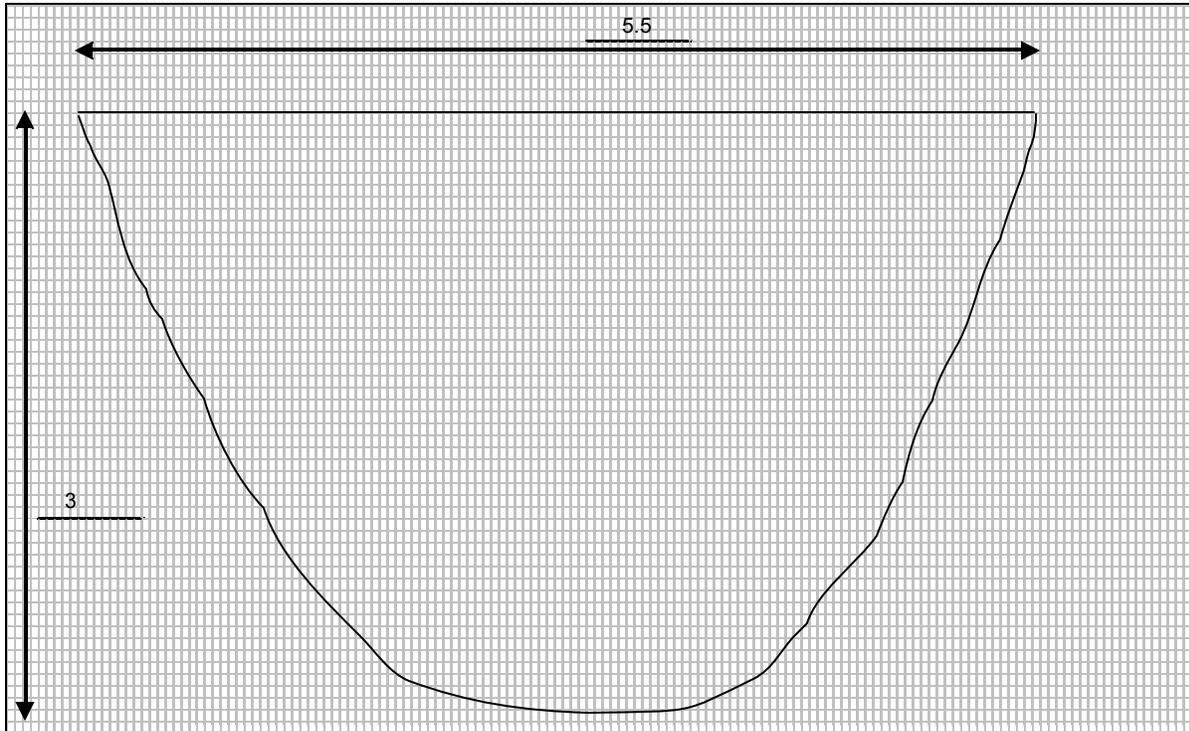
0-4 feet	45 percent debris (wood, plastic, brick), 30 percent gravel; sweet smell on west end of pit; silty clay
6 feet	Debris (wood, paper, glass)
8-10 feet	120 ppm at soil pile
12 feet	140 ppm, 0 percent LEL

### Notes:

Need to take VOC sample on boring.  
Samples: W14W001 (4 feet) and W14W002 (12 feet).

# TEST PIT LOG WE18D

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 5.5
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 3
Type of Equipment:	CAT 320B	Depth to Water (feet): 3



### Soil Description:

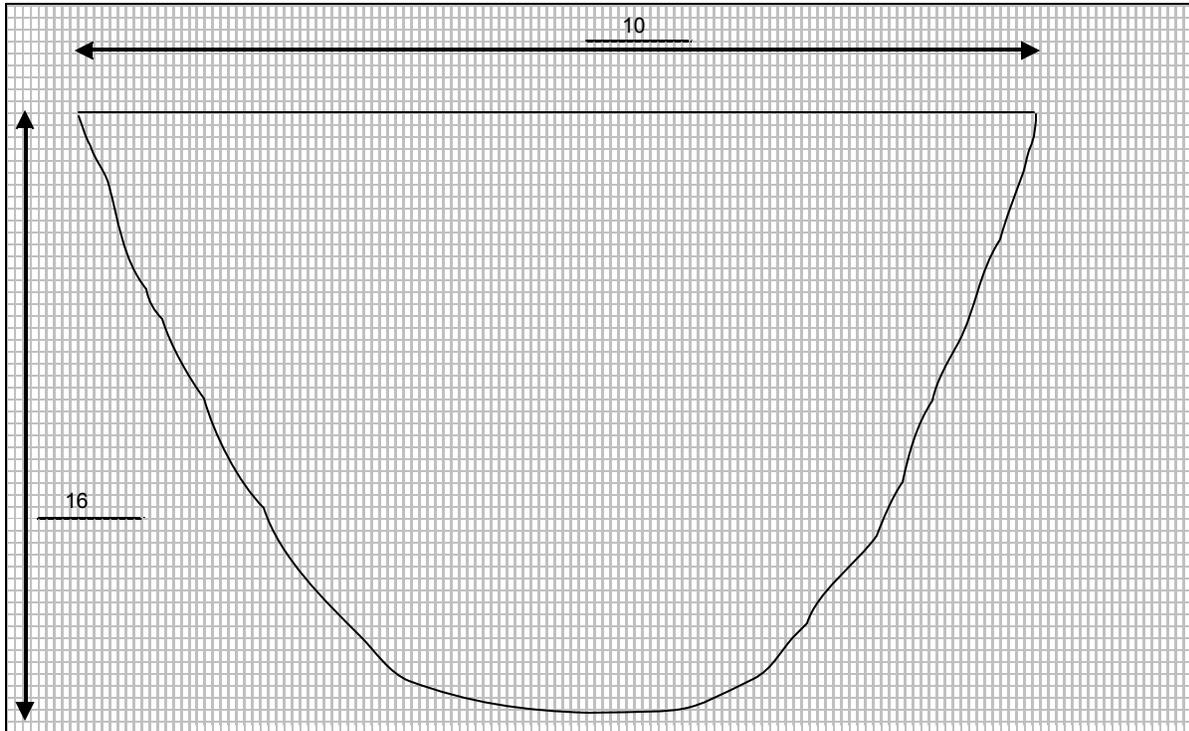
0-2 feet 60 percent gravel; 10 to 20 percent rubble, some sand; 80 ppm methane  
3 feet No trash; pit overflowing with water after backfill

### Notes:

Photograph: Pit full of water, looking west.  
Sample: W29W001 (3 feet) at 1445.

# TEST PIT LOG WE19A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 16
Type of Equipment:	CAT 320B	Depth to Water (feet): 16



### Soil Description:

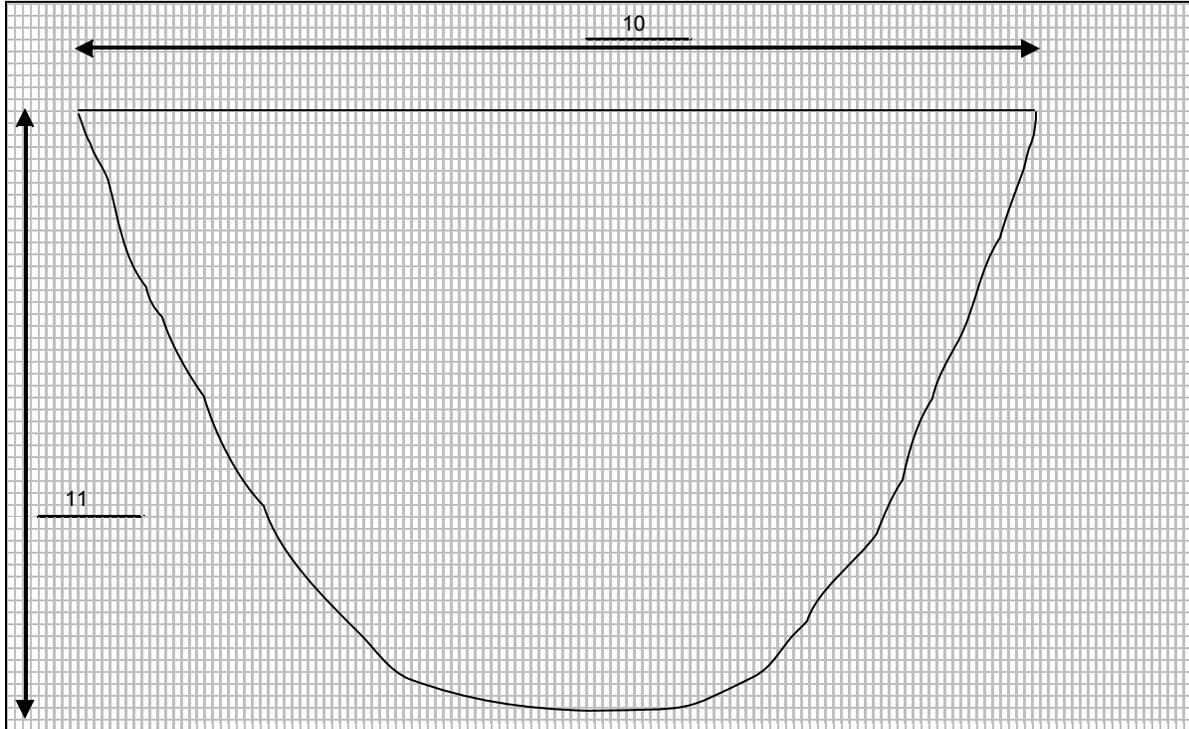
- 4 feet 20 percent gravel, 20 percent brick; 20 ppm at soil pile
- 10 feet Stained soil; larger gravel; boulders increasing in percentage; 20 ppm in soil pile
- 12 feet 5 percent wood debris
- 13-16 feet 60 percent debris (wood, brick, gravel, plastic); black-stained soil, clay; 0 ppm and 0 percent LEL at soil pile

### Notes:

Need to take VOC samples from boring at 4 feet bgs.  
Samples: W15W001 (4 feet), W15W002 (16 feet).

# TEST PIT LOG WE19B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 11
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

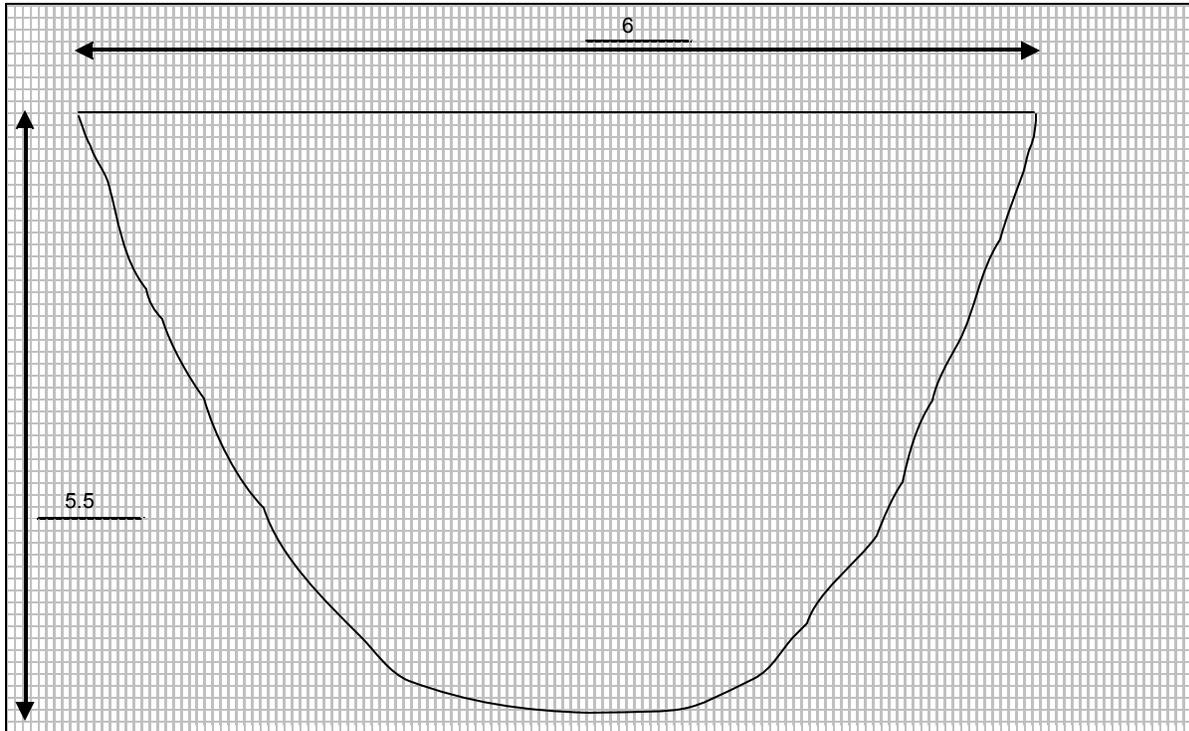
- 4 feet Increasing percentage of large concrete boulders; 0 ppm at soil pile, 4 feet bgs; 10 percent gravel in clay
- 6 feet Large concrete rubble
- 7.5 feet Plastic pipe
- 8 feet Strong methane smell, 30 percent wood debris, 560 ppm, 0 percent LEL; below 8 feet, 50 percent wood debris, strong odor
- 10 feet 95 percent wood debris; 460 ppm at soil pile
- 11 feet Refusal

### Notes:

Samples: W16W001 (4 feet) and W16W002 (11 feet) with EnCores.

# TEST PIT LOG WE19C

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 6
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 5.5
Type of Equipment:	CAT 320B	Depth to Water (feet): 5.5



### Soil Description:

- 0-1 foot Dark brown silt; 0 ppm ambient
- 2-3 feet Lighter brown silty clay; gravel fill, 5 percent debris
- 3-4 feet Minor black staining in soil
- 5 feet Soils very wet; 10 percent debris, 40 percent gravel, pieces of wood; 5 to 6 feet hit water

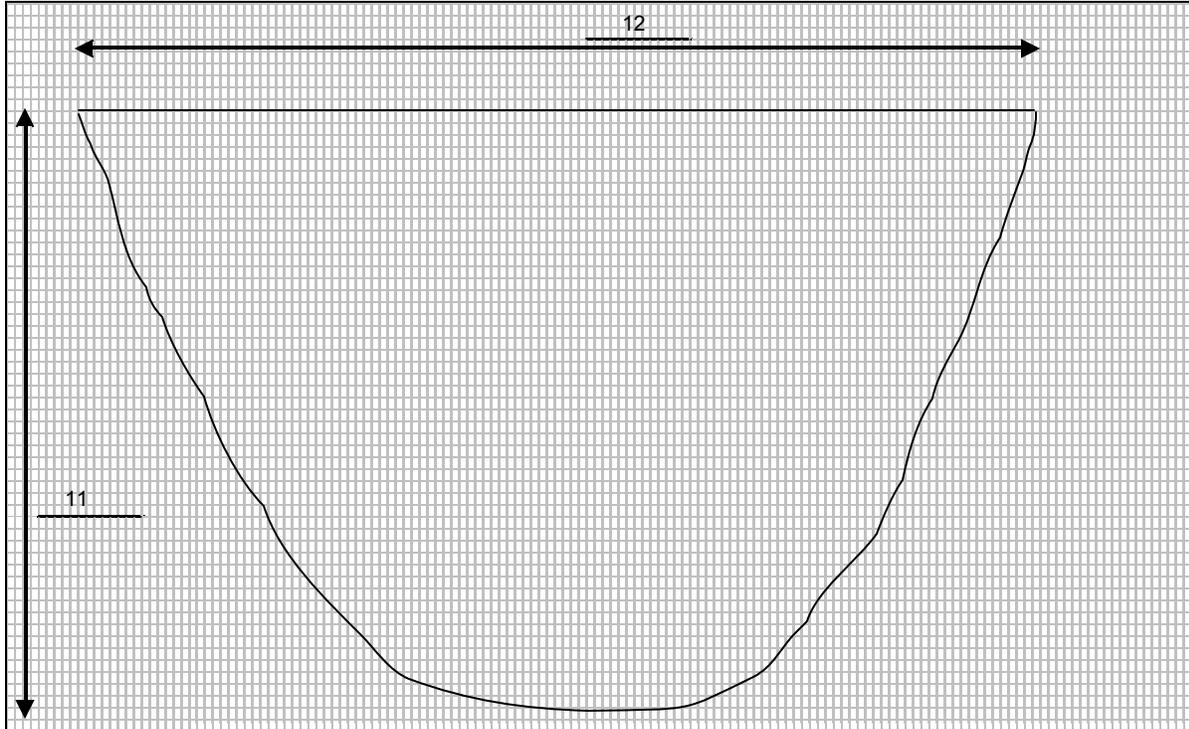
### Notes:

Photographs: two photographs taken through fence at drums and tires; one photograph looking west at 3 to 4 feet; one photograph of pit looking east at 5.5 feet in depth.

Sample: W28W001 (4 feet) at 1415.

# TEST PIT LOG WE20A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 12
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 11
Type of Equipment:	CAT 320B	Depth to Water (feet): 10



### Soil Description:

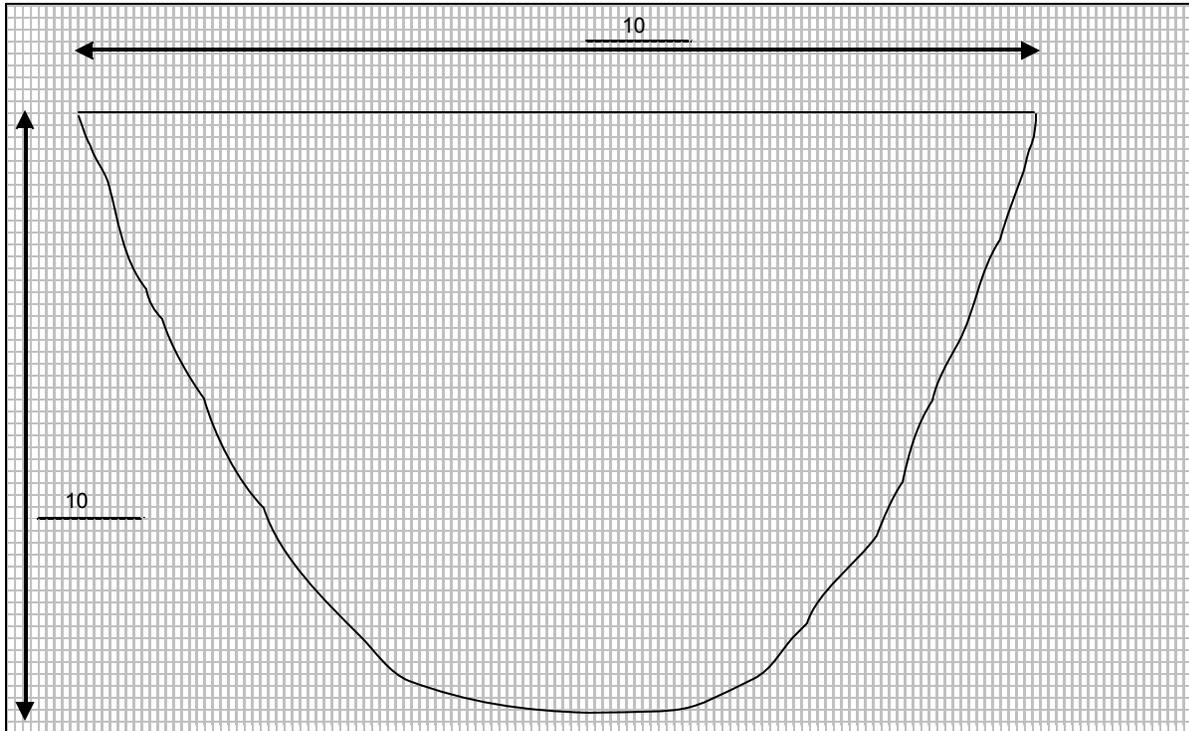
0-2 feet	Soil with gravel fill; 80 ppm, 0 percent LEL
4 feet	100 percent gravel, 40 ppm, 0 percent recovery; no samples collected at 4 feet
6 feet	Below 6 feet - clayey soils, 90 percent debris (wood, plastic, brick, stained soils)
7 feet	240 ppm
8 feet	140 ppm
10 feet	1,700 ppm, 2 percent LEL, water at 10 feet
11 feet	Below 10 feet, 240 ppm

### Notes:

Sample: W17W001 (11 feet) with EnCores.

# TEST PIT LOG WE20B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 10
Type of Equipment:	CAT 320B	Depth to Water (feet): 10



### Soil Description:

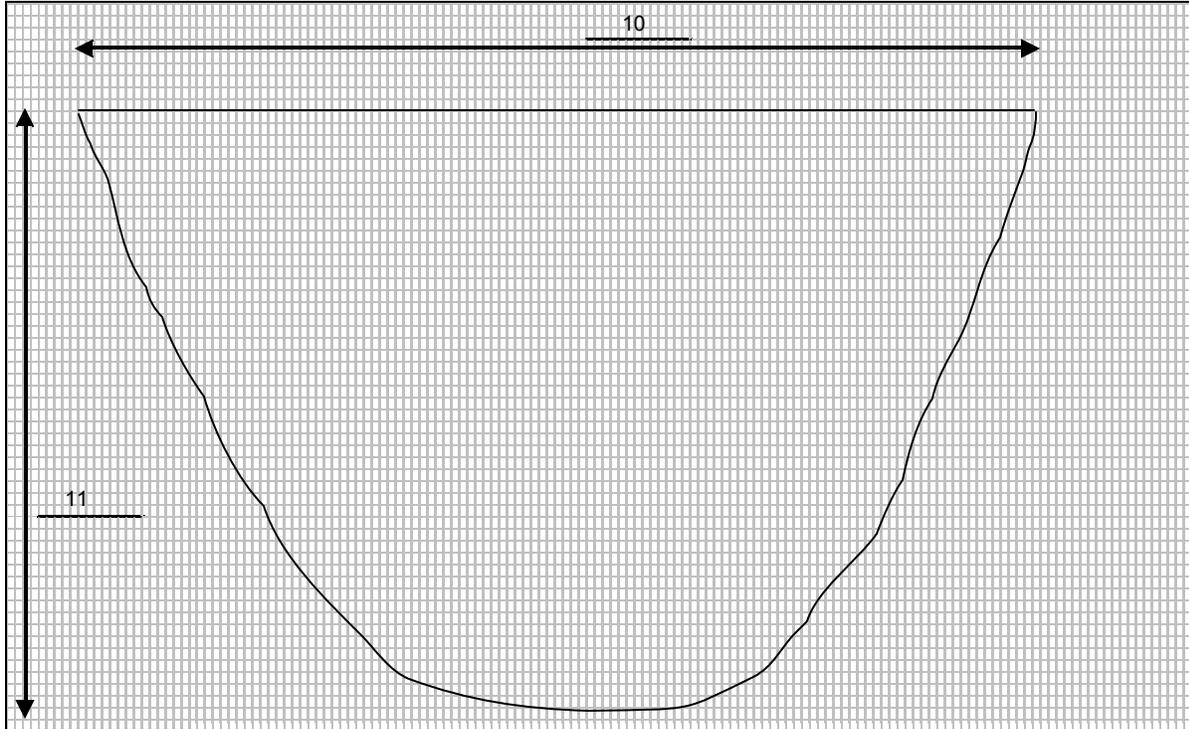
4 feet	Below 4 feet - stained soils
10 feet	80 ppm, water table

### Notes:

Samples: W18W001 (4 feet), duplicate W18W004 (4 feet), W18W002 (10 feet), and duplicate W18W003 (10 feet) MS/MSD.

## TEST PIT LOG WE21A

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/19/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/19/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 10
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 11
Type of Equipment:	CAT 320B	Depth to Water (feet):



**Soil Description:**

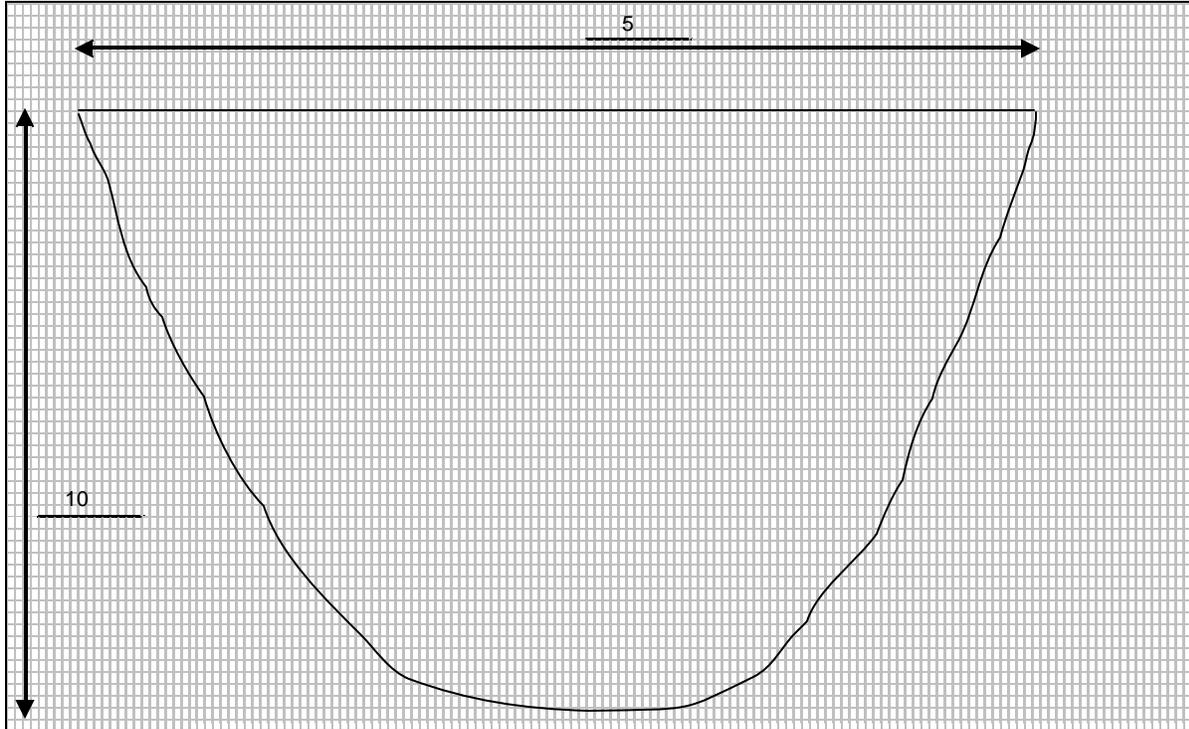
1 foot	40 percent debris (PVC pipes, large gravel and concrete); 40 ppm
5 feet	Below 5 feet - 50 percent gravel, concrete rubble
8 feet	Black staining, 2 percent LEL, 1,200 ppm
10 feet	1 percent LEL, 1,000 ppm
12 feet	10 percent LEL, 3,600 ppm

**Notes:**

Samples collected at northwest corner of landfill: W19W001 (4 feet) with MS/MSD, duplicate W19W002 (4 feet), W19W003 (11 feet) with MS/MSD, and duplicate W19W004 (11 feet).

# TEST PIT LOG WE21B

Project No:	G90160030303020711	Page 1 of 1
Project Name:	HPS Parcel E Nonstandard Data Gaps Investigation	Date Started: 3/21/2002
Site Name:	Parcel E IR-01/21	Date Completed: 3/21/2002
Geologist/Engineer:	VICTORIA COKER	Length (feet): 5
Excavation Company:	ERRG	Width (feet): 4
Method:		Depth (feet): 10
Type of Equipment:	CAT 320B	Depth to Water (feet):



### Soil Description:

- 0-2 feet Silty sand backfill with large concrete rubble; 40 percent gravel; backfill; 60 ppm ambient
- 4-5 feet Less than 10 percent debris
- 8 feet Backfill; rich brown color; 40 percent color
- 10 feet Brown and gray silty clay

### Notes:

Samples: W27W001 (4.5 feet) at 1345 and W27W002 (10 feet).

**APPENDIX J4**  
**SOIL BORING AND WELL INSTALLATION LOGS FOR BGMP**

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Date Completed: 6/29/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 21.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1							<b>Sandy Silt with Gravel (ML)</b> - grayish brown (10yr 5/2), dry, soft, 35-40% fine grained sand, 15-20% fine to coarse gravel, trace rootlets, trace wood debris	Borehole hand-augered to ~4' bgs on 6/28/04	
2								Start drilling on 6/29/04	
3									
4							- same as above		
5							<b>Sandy Clay (CL)</b> - very dark grayish brown (2.5y 3/2), moist, medium stiff, low plasticity, fine grained sand, trace fine gravel, hard plastic debris at 5 feet bgs, lean clay		
6									
7							<b>Clay (CL)</b> - very dark gray (2.5y 3/1), moist, medium stiff, medium plasticity, 5-10% fine grained sand, trace fine and coarse gravel, lean clay		
8									
9							<b>Clayey Sand (SP-SC)</b> - very dark gray (2.5y 3/1), moist, dense, 55-60% fine to medium grained sand, trace fine gravel		
10							<b>Sandy Clay (CL)</b> - very dark grayish brown (10yr 3/2), moist, medium stiff, low plasticity, 30-35% fine grained sand, trace fine gravel		
11							<b>Sandy Clay (CL)</b> - black (10yr 2/1), moist to very moist, medium stiff, medium plasticity, 20% fine sand, wood debris throughout, trace plastic debris/trash, lean clay		
12							- paper trash - black wood debris/sawdust, metal debris at 11'		
13							- no recovery		
14									
15									
16									
17									
18									
19									
20									

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PROJECT NO. 41330

**LOG OF BORING NO. IR01BLF1A**

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PLATE

9/1/04 11:37:36 AM

Date Completed: 6/29/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 21.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21								Bottom of Boring = 21 feet	Boring backfilled with Bentonite chips
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									



**LOG OF BORING NO. IR01BLF1A**

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PLATE

PROJECT NO. 41330

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9/1/04 11:37:37 AM

Date Completed: 6/25/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 55.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1					0.0		Sand Silt with Gravel (SP-SM) - very dark grayish brown (10yr 3/2), dry, soft, 35-40% fine sand, 10-15% fine and coarse gravel		
2									
3									
4					0.1		Silty Sand with Gravel (SW-SM) - dark yellowish brown (10yr 3/6), dry, loose, 50-55% fine to coarse sand, 15-20% fine-coarse gravel, trace brick material, well graded		
5					0.1		Silty Sand with Gravel (SP-SM) - very dark gray (2.5y 3/1), damp, loose, 50-55% fine to medium grained sand, 15-20% serpentinite gravel (fine to coarse), some FeO2 staining		
6					0.1		- same as above		
7									
8									
9									
10					0.1		Silty Sand with Gravel (SW-SM) - very dark greenish gray (10G 3/1), damp, loose, 45-50% fine to coarse grained sand, 30-35% silt, 20-25% fine to coarse gravel (serpentinite gravel), trace FeO2 staining, well graded		
11							No Recovery		
12									
13									
14									
15					0.1		Silty Clay with Sand and Gravel (CL) - greenish black (10G 2.5/1), moist, soft, medium plasticity, 15-20% fine grained sand, 15-20% fine to coarse gravel (serpentinite gravel), lean clay		
16									
17					0.1		Silty Sand with Gravel (SW-SM) - very dark greenish gray (10G 3/1), very moist to saturated, loose, 50-55% fine to coarse grained sand poorly sorted, 20-25% fine to coarse gravel, trace FeO2 staining, well graded		
18									
19					0.1		Sandy Clay (CL) - dark gray (10yr 4/1), moist, medium stiff, medium plasticity, 30% fine grained sand, trace medium to coarse sand,	▽	Bentonite Grout Slurry
20									

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PROJECT NO. 41330

LOG OF BORING NO. IR01MW366B

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

9/1/04 11:37:42 AM

Date Completed: 6/25/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 55.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21							10-15% fine to coarse gravel (serpentinite gravel), lean clay		
22					0.1		Gravelly Sand with Silt (SP-SM) - dark gray (10yr 4/1), saturated, loose, 20-25% gravel, 55-60% fine grained sand, 5-10% coarse grained sand		
23					0.1		Sandy Clay (CL) - dark gray (2.5y 4/1), damp/moist, soft, high plasticity, 20-25% fine grained sand, trace coarse sand, lean clay - same but color change to dark grayish brown (2.5y 4/2), moist to very moist		
24									
25					0.1		Gravelly clay with Sand (CL) - very dark grayish brown (2.5y 3/2), damp, medium stiff, medium plasticity, 10-15% fine grained sand, 20% fine gravel, trace coarse gravel (serpentinite gravel), trace FeO2 staining, lean clay - same as 22'-25'		
26									
27					0.1				
28									
29									
30					0.1		Silty Sand with Gravel (SW-SM) - very dark greenish gray (10G 3/1), moist, loose, 50-55% fine to coarse grained sand poorly sorted, 20-25% fine to coarse gravel (serpentinite gravel), some FeO2 staining, well graded sand		
31									
32					0.1		Clay (CH) - very dark gray (2.5y 3/1), moist, soft, high plasticity, trace shell fragments, fat clay		
33									
34									
35									
36									
37									
38									
39									Bentonite Chip Seal
40									

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**LOG OF BORING NO. IR01MW366B**

PLATE

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PROJECT NO. 41330

(cont'd)

9/1/04 11:37:43 AM

Date Completed: 6/25/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 55.0 ft

Drilling Method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
41									
42									
43					0.1		Clayey Sand (SC) - very dark gray (2.5y 3/1), very moist, medium dense, 70-75% fine to medium grained sand, trace shell fragments material, trace fine gravel	Stainless Steel Centralizer at 43'	
44									
45	0426T002	⊗			0.1		Sand with Gravel (SP) - very dark gray (10yr 3/1), saturated, loose, 90-95% fine grained sand, 5-10% fine gravel, trace silt, well sorted sand	4" SCH 40 PVC screened slot size .020 Sand 2/16	
46									
47					0.1	Sand (SP) - very dark gray (10yr 3/1), very moist to saturated, dense, 95% fine grained sand, trace silt, trace medium grained sand, well sorted sand			
48									
49							Sand (SP) - olive gray (5y 4/2), moist, dense, fine grained sand, trace silt, trace FeO2 staining, well sorted sand - same but color change to light olive brown (2.5y 5/4), increase to some FeO2 staining (increases with depth)		
50					0.1				
51					0.1				
52								Stainless Steel Centralizer at 53'	
53									
54									
55								Bottom of Boring = 55 feet	
56									
57									
58									
59									
60									

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**LOG OF BORING NO. IR01MW366B**

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PROJECT NO. 41330

(cont'd)

9/1/04 11:37:44 AM

Date Completed: 6/30/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 35.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1						0.1	<b>Silty Sand with Gravel (SP)</b> - brown (10yr 4/3), dry, loose, 30-35% silt, 50-55% fine grained sand, 15-20% fine to coarse gravel, trace rootlets		
2									
3									
4						0.1	<b>Clay with Sand and Gravel (CL)</b> - very dark grayish brown (10yr 3/2), moist, medium stiff, low-medium plasticity, 20% fine sand, 15% fine to coarse gravel, lean clay		
5									
6						0.1	<b>Clayey Sand with Gravel (SC)</b> - very dark grayish brown (10yr 3/2), damp, loose, 55-60% fine to medium grained sand, 15-20% fine to coarse gravel, 15-20% clay		
7						0.1	<b>Gravelly Clay with Sand (CL)</b> - dark brown (10yr 3/3), moist to very moist, medium stiff, medium plasticity, 20-25% fine to coarse gravel, 10-15% fine grained sand, lean clay		
8						0.1	<b>Sandy Clay/Clayey Sand (CL/SP-SC)</b> - very dark gray (10yr 3/1), very moist to saturated, dense, 45-50% fine grained sand, 45-50% clay, trace fine gravel		
9									
10									
11									← Bentonite Chip Seal
12						0.1	<b>Clayey Sand (SP)</b> - black (10yr 3/1), very moist to saturated, dense, 60% fine grained sand, 10% fine gravel, 35-40% clay		
13						20.3	<b>Clay with Gravel (CL)</b> - black (10yr 3/1), very moist to saturated, soft, high plasticity, 15-20% fine to coarse gravel, trace fine grained sand, black tarry substance throughout, lean clay		
14									
15						0.1	<b>Sand (SP)</b> - black (10yr 3/1), saturated, loose, 90% fine to medium grained sand, 10% silt		
16									
17						0.1	<b>Sand (SP)</b> - dark olive brown (2.5y 3/3), saturated, fine grained sand, dense		
18									
19									
20									

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**LOG OF BORING NO. IR01MW403B**

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PROJECT NO. 41330

9/1/04 11:37:47 AM

Date Completed: 6/30/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 35.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21									
22									
23	0427T007	⊠							
24							Sand (SP) - dark gray (10yr 4/1), saturated, loose, fine to medium grained sand		
25									
26									
27									
28									
29									
30									
31					0.1		Clayey Sand (SP) - brown (10yr 4/3), saturated, dense, FeO <sub>2</sub> staining, fine to medium grained sand 60-65%		
32									
33									
34									
35								Bottom of Boring = 35 feet	
36									
37									
38									
39									
40									

← Sand 2/16  
← 4" SCH 40 PVC screened slot size 020

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**LOG OF BORING NO. IR01MW403B**

PLATE

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PROJECT NO. 41330

(cont'd)

9/1/04 11:37:48 AM

Date Completed: 6/30/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 21.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1						0.1	<b>Sandy Silt with Gravel (ML)</b> - olive brown (2.5y 4/3), dry, soft, 35-40% fine grained sand, 15-20% fine to coarse gravel		
2						0.1	<b>Silty Sand (SP-SM)</b> - very dark grayish brown (2.5y 3/2), dry, loose, 60-65% fine to medium grained sand, 10-15% fine gravel	Bentonite Chip Seal	
3					0.1				
4							<b>Silty Sand (SP-SM)</b> - olive brown (2.5y 4/4), damp, dense, 20-25% silt, 65-70% fine to medium grained sand, 5-10% fine gravel, FeO2 staining		
5						0.1			
6							- same but with trace rootlets		
7						0.1	- same as above (2.5-5') but color change to dark grayish brown (10yr 4/2), trace brick material		
8						0.1	<b>Sand (SP)</b> - dark olive brown (2.5y 3/3), moist, dense, fine sand, 10%-15% silt, FeO2 staining		
9									
10						0.1	<b>Clay with Gravel (CL)</b> - very dark brown (10yr 2/2), moist, stiff, medium plasticity, 5-10% fine to coarse gravel, lean clay		
11						0.1	<b>Gravelly Silt with Sand (ML)</b> - dark brown (10yr 3/3), saturated, soft, 20-25% fine gravel, 15-20% fine to medium grained sand	▽	
12					0.1				
13						0.1	<b>Silty Sand with Gravel (SP-SM)</b> - black (10yr 4/1), very moist to saturated, 10-15% fine to coarse gravel, 50-55% fine grained sand, trace medium grained sand, trace wood debris, trace brick debris 12'		
14	0427T008	⊗				0.1	<b>Sandy Clay (CL)</b> - very dark grayish brown (10yr 3/2), moist, soft, medium plasticity, 35-40% fine grained sand, 55-60% clay, trace fine gravel, lean clay		
15									
16							<b>Clayey Sand (SP-SC)</b> - dark olive brown (2.5y 3/2), saturated, loose, 30-35% clay, 60-65% fine grained sand, trace of coarse sand		
17									
18						0.1	<b>Sandy Clay with Gravel (SW-SC)</b> - black (10yr 4/1), saturated, soft, medium plasticity, 35-40% fine to coarse grained sand, 10-15% fine to coarse gravel, well graded sand		
19									
20									

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PROJECT NO. **41330**

**LOG OF BORING NO. IR01MWLF1A**

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PLATE

9/1/04 11:37:52 AM

Date Completed: 6/30/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 21.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21						USCS		Bottom of Boring = 21 feet	
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

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**LOG OF BORING NO. IR01MWLF1A**

PLATE

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PROJECT NO. 41330

(cont'd)

9/1/04 11:37:53 AM

Date Completed: 6/28/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 21.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1							<b>Silty Sand with Gravel (SP-SM)</b> - dark grayish brown (10yr 4/2), dry, loose, 50-55% fine to coarse sand, 20-25% silt, 20-25% fine gravel		
2									
3									
4									
5					0.0		<b>Sandy Clay with Gravel (CL)</b> - dark olive brown (2.5y 3/3), damp, soft, low plasticity, 30-35% fine to medium grained sand, trace coarse grained sand, 15-20% fine gravel, trace brick debris, lean clay		
6					0.0				
7							<b>Sandy Clay with Gravel (CL)</b> - dark brown (10yr 3/2), moist, soft, low plasticity, 30-35% fine to medium grained sand, trace coarse grained sand, 15-20% fine gravel, trace coarse gravel, lean clay		
8									
9					0.0		<b>Sandy Clay with Gravel (CL)</b> - very dark gray (10yr 3/1), moist, soft, low plasticity, 25-30% fine to medium grained sand, 15-20% fine gravel, lean clay		
10									
11					0.0		<b>Clayey Sand with Gravel (SC)</b> - very dark gray (10yr 3/1), moist, loose, 55-60% fine to coarse sand, 20-25% clay, 15-20% fine gravel		
12	0427T006								
13					0.0		<b>Sandy Clay (CL)</b> - black (10yr 2/1), moist to very moist, soft, medium plasticity, 25-30% fine to coarse grained sand, trace fine gravel, 70-75% clay, lean		
14									
15					0.0		- same as above but medium stiff, medium plasticity		
16					13.5		<b>Clayey Sand (SC)</b> - black (10yr 2/1), very moist to saturated, dense, 75% fine to medium grained sand, trace shell fragments, trace coarse grained sand, black tarry substance, from 15.5' to 15.75', increasing shell fragments with depth		
17									
18									
19					0.0		<b>Sandy Clay (CL)</b> - black (10yr 2/1), very moist		
20									

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PROJECT NO. 41330

**LOG OF BORING NO. IR01MWLF2A**

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PLATE

9/1/04 11:37:56 AM

Date Completed: 6/28/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 21.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21							to saturated, soft, medium plasticity, 25-30% fine grained sand, trace shell fragments, trace med sand, lean clay	Bottom of Boring = 21 feet	← Bentonite Chip
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

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**LOG OF BORING NO. IR01MWLF2A**

PLATE

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PROJECT NO. 41330

(cont'd)

9/1/04 11:37:57 AM

Date Completed: 6/28/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 32.0 ft

Drilling method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction	
1					0.0		<b>Silty Sand (SP)</b> - brown (10yr 4/2), dry, loose, 10-15% fine to coarse gravel, 20-25% silt, fine grained sand, trace rootlets, concrete debris			
2										
3										
4										
5					0.0		<b>Silty Sand with Gravel (SP-SM)</b> - (10yr 5/3), dry, loose, 20% fine to coarse gravel, 20-25% silt, fine to medium grained sand, concrete debris	Core not intact core fell out of 4" pipe when shoe was removed		
6										
7										
8										
9										
10										
11							<b>Sandy Clay (CL)</b> - very dark grayish brown (10yr 3/2), moist, soft, medium plasticity, 15-20% fine grained sand, trace fine gravel, lean clay			
12										
13										
14										
15					0.0		<b>Silty Sand with Gravel (SP-SM)</b> - grayish brown (10yr 5/2), dry, loose, 20% fine to coarse gravel, 15-20% silt, fine sand			
16					0.0					
17							<b>Sandy Clay (CL)</b> - very dark gray (10yr 3/1), moist, soft, trace fine gravel, medium plasticity, 15-20% fine to medium grained sand, lean clay			
18					0.0					
19										
20										

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**LOG OF BORING NO. IR01MWLF4A**

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PROJECT NO. **41330**

9/1/04 11:36:01 AM

Date Completed: 6/28/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 32.0 ft

Drilling Method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21					0.0		<b>Silty Sand (SP-SM)</b> - dark gray (10yr 4/1), dry, loose, 20-25% silt, 20% fine gravel, trace coarse gravel, fine sand		
22	0427T005	⊗			0.0		<b>Sandy Clay (CL)</b> - very dark gray (10yr 3/1), moist, soft, low plasticity, 20-25% fine grained sand, 10% fine gravel, lean clay		
23									
24									
25					0.0		<b>Sandy Silt (ML)</b> - dark gray (10yr 4/1), saturated soft, 30-35% fine to coarse grained sand	Only 6" recovery	
26									
27									
28									
29									
30					0.0		<b>Clayey Sand with Gravel (SC)</b> - dark gray (10yr 4/1), saturated, loose, 20% clay, 20-25% fine gravel, fine to coarse sand		
31									
32									
33								Bottom of Boring = 32 feet	
34									
35									
36									
37									
38									
39									
40									

← Bentonite Chip



**LOG OF BORING NO. IR01MWLF4A**

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PROJECT NO. 41330

(cont'd)

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9/1/04 11:38:02 AM

Date Completed: 6/25/04

Drilling method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 55.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
1						0 1	Silty Sand with Gravel (ML) - brown (10yr 5/3), dry, loose, soft, 10-15% fine to coarse gravel, 30-35% fine grained sand, some rootlets		
2						0 1	Silty Sand (SW-SM) - (10yr 2/2), damp, loose, 20-25% silt, 5-10% fine to coarse gravel, fine to coarse grained sand, trace glass debris		
3									
4							- same as above		
5									
6						9 3	Sand with Silt and Gravel (SW-SM) - very dark gray (10yr 3/1), dry, loose, fine to medium grained sand, 10% silt, 15-20% fine to coarse gravel, small shell fragments throughout		
7									
8									
9									
10						0 1	Gravelly Clay (CL) - very dark gray (10yr 3/1), moist, medium stiff, medium plasticity, 15-20% fine gravel, trace coarse gravel, trace FeO2 staining, lean clay		
11									
12						0 1	- same as above but color change to dark gray (10yr 4/1)		
13									
14									
15									
16									
17						1 1 0	- same as above but very moist and black oily substance throughout		Bentonite Grout Slurry
18						0 1	Clay with Gravel (CL) - dark gray (10yr 4/1), moist, medium stiff, high plasticity, 20% fine gravel, trace FeO2 staining, (serpentinite gravel), lean clay		
19									
20									

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**KLEINFELDER**

**LOG OF BORING NO. IR01MWLF4B**

PLATE

Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

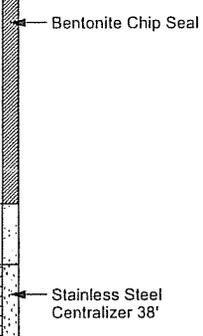
PROJECT NO. 41330

9/1/04 11:36:07 AM

Date Completed: 6/25/04  
 Logged By: S. Titus (Brown & Caldwell)  
 Total Depth: 55.0 ft

Drilling Method: Sonic Rig  
 Hammer Wt: \_\_\_\_\_  
 Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
21							- same but 20% fine to coarse gravel (serpentine gravel)		
22							- same but change to low plasticity, add 10% fine sand		
23									
24									
25									
26							Clay with Gravel (CL) - very dark gray (5y 3/1), moist, soft, high plasticity, 15-20% fine gravel, trace coarse sand, trace coarse serpentine gravel, lean clay		
27							- same but trace shell fragments		
28							Clay (CH) - very dark gray (5y 3/1), moist, soft, high plasticity, trace shell fragments, trace FeO <sub>2</sub> staining, trace fine gravel, oily black substance at 31' bgs, fat clay		
29									
30									
31								▽	
32							Clay with Sand and Gravel (CL) - very dark gray (10yr 3/1), saturated, soft, medium plasticity, 15-20% fine to coarse grained sand, 10-15% fine to coarse gravel, free oily product (black) throughout, lean clay		
33							Clay (CH) - very dark gray (10yr 3/1), moist/damp, soft, high plasticity, trace shell fragments throughout, fat clay		
34									
35	0426T003	✕							
36									
37							Clayey Sand (SP-SC) - black (10yr 2/1), very moist, dense, fine sand, 20-25% clay		
38							Sand (SP) - black (10yr 2/1), very moist to saturated, dense, fine grained sand, trace clay, trace shell material		
39									
40									



**LOG OF BORING NO. IR01MWLF4B**

PLATE

Hunters Point Naval Shipyard  
 Parcel E  
 San Francisco, CA.

PROJECT NO. 41330

(cont'd)

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9/1/04 11:38:08 AM

Date Completed: 6/25/04

Drilling Method: Sonic Rig

Logged By: S. Titus (Brown & Caldwell)

Hammer Wt: \_\_\_\_\_

Total Depth: 55.0 ft

Notes: Borehole logged from Sonic Core. The lithologic descriptions and USCS classifications are based entirely on visual/manual procedures.

Depth (feet)	Sample Number	Sample Type	Blows/Foot	Recovery (%)	OVA (ppm) PID/FID	USCS	Description	Remarks	Well Construction
41						0.1	Clay (CH) - very dark gray (10yr 3/1), moist, soft, high plasticity, trace shell fragments, fat clay		
42									
43	0426T004	⊗				0.9	Sand (SP) - dark gray (10yr 4/1), saturated, loose, fine grained sand, trace coarse grained sand, 5-10% silt, black oily-like substance throughout, oily sheen in water		
44									
45							Sand (SP) - very dark gray (10yr 3/1), saturated, dense, fine grained sand, 10% silt, trace shell material		
46									
47									
48									
49									
50									
51									
52							Sand (SP) - very dark greenish gray (10G 3/1), damp to moist, dense, fine grained sand, trace FeO <sub>2</sub> staining, 10% silt		
53									
54									
55								Bottom of Boring = 55 feet	
56									
57									
58									
59									
60									

Sand 2/16  
4" SCH 40 PVC  
screened slot size  
020

Stainless Steel  
Centralizer  
End Cap



LOG OF BORING NO. IR01MWLF4B

PLATE

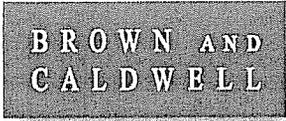
Hunters Point Naval Shipyard  
Parcel E  
San Francisco, CA.

PROJECT NO. 41330

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9/1/04 11:38:09 AM



**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 24 June 2004  
 WELL COMPLETED: 25 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: I.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 55 feet  
 FILTER PACK: #2/16 Monterey sand  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 BENTONITE SEAL: 3/8-in. chips  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 ANNULAR SEAL: 5% bentonite and neat cement slurry  
 POURED     TREMMIED

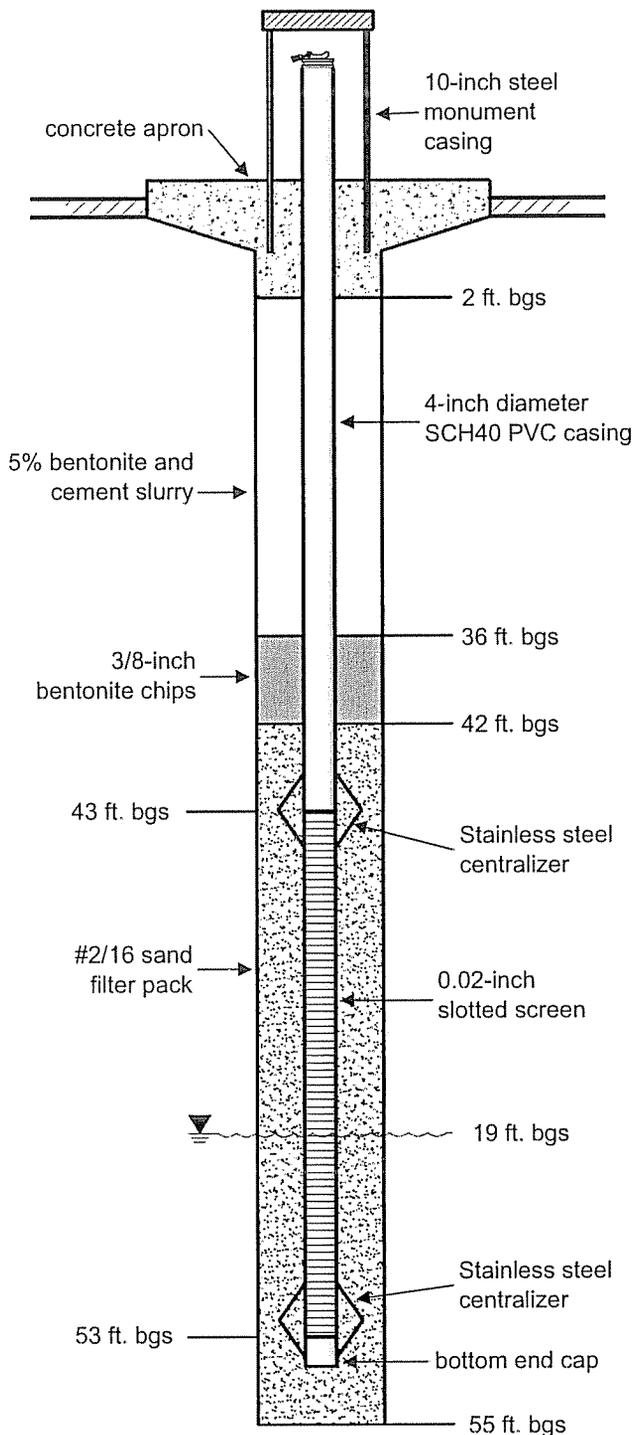
**CASING INFORMATION**

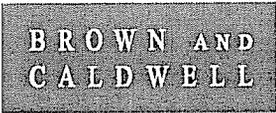
BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SLOT SIZE: 0.020-inch  
 CENTRALIZERS USED?  
 YES     NO;  
 CENTRALIZER DEPTHS: 43', 53'

**SURVEY INFORMATION**

TOC ELEVATION: 16.57  
 GROUND ELEVATION: Not Measured  
 NORTHING CORD. 451008.5  
 EASTING CORD. 1458259.2  
 COORDINATE SYSTEM: State Plane NAD 27  
 DATE SURVEYED: 20 July 2004  
 SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MW366B**





**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 28 June 2004  
 WELL COMPLETED: 30 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: I.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 35 feet  
 FILTER PACK: #2/16 Monterey sand  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 BENTONITE SEAL: 3/8-in. chips  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 ANNULAR SEAL: NA  
 POURED     TREMMIED

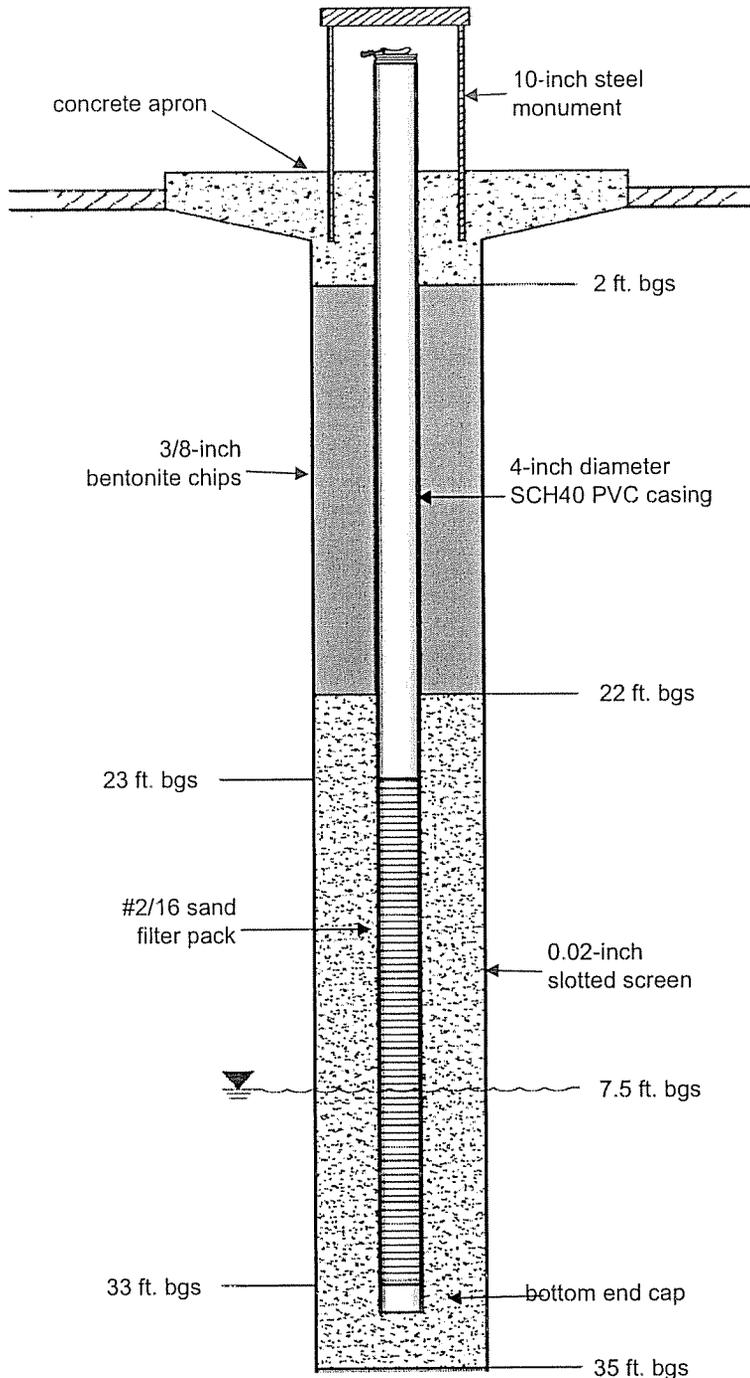
**CASING INFORMATION**

BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SLOT SIZE: 0.020-inch  
 CENTRALIZERS USED?  
 YES     NO;  
 CENTRALIZER DEPTHS: \_\_\_\_\_, \_\_\_\_\_

**SURVEY INFORMATION**

TOC ELEVATION: 10.43  
 GROUND ELEVATION: Not Measured  
 NORTHING CORD. 451842.6  
 EASTING CORD. 1457153.6  
 COORDINATE SYSTEM: State Plane NAD 27  
 DATE SURVEYED: 20 July 2004  
 SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MW403B**





**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 30 June 2004  
 WELL COMPLETED: 30 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: J.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 21 feet  
 FILTER PACK: #2/16 Monterey sand  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 BENTONITE SEAL: 3/8-in. chips  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 ANNULAR SEAL: NA  
 POURED     TREMMIED

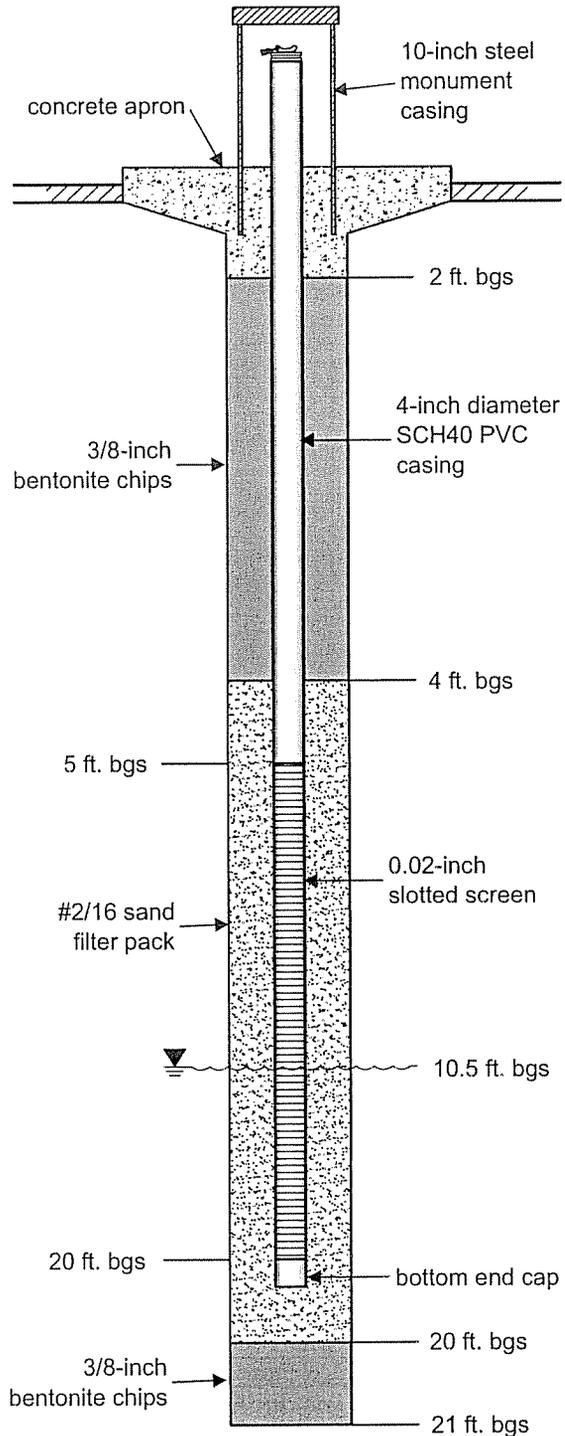
**CASING INFORMATION**

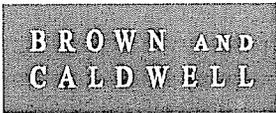
BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SLOT SIZE: 0.020-inch  
 CENTRALIZERS USED?  
 YES     NO;  
 CENTRALIZER DEPTHS:     ,     

**SURVEY INFORMATION**

TOC ELEVATION: 20.8  
 GROUND ELEVATION: Not Measured  
 NORTHING CORD. 451551.7  
 EASTING CORD. 1457296.4  
 COORDINATE SYSTEM: State Plane NAD 27  
 DATE SURVEYED: 20 July 2004  
 SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MWLF1A**





**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 28 June 2004  
 WELL COMPLETED: 28 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: I.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 21 feet  
 FILTER PACK: #2/16 Monterey sand

EMPLACEMENT METHOD:

POURED     TREMMIED  
 BENTONITE SEAL: 3/8-in. chips

EMPLACEMENT METHOD:

POURED     TREMMIED  
 ANNULAR SEAL: NA

POURED     TREMMIED

**CASING INFORMATION**

BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SLOT SIZE: 0.020-inch

CENTRALIZERS USED?

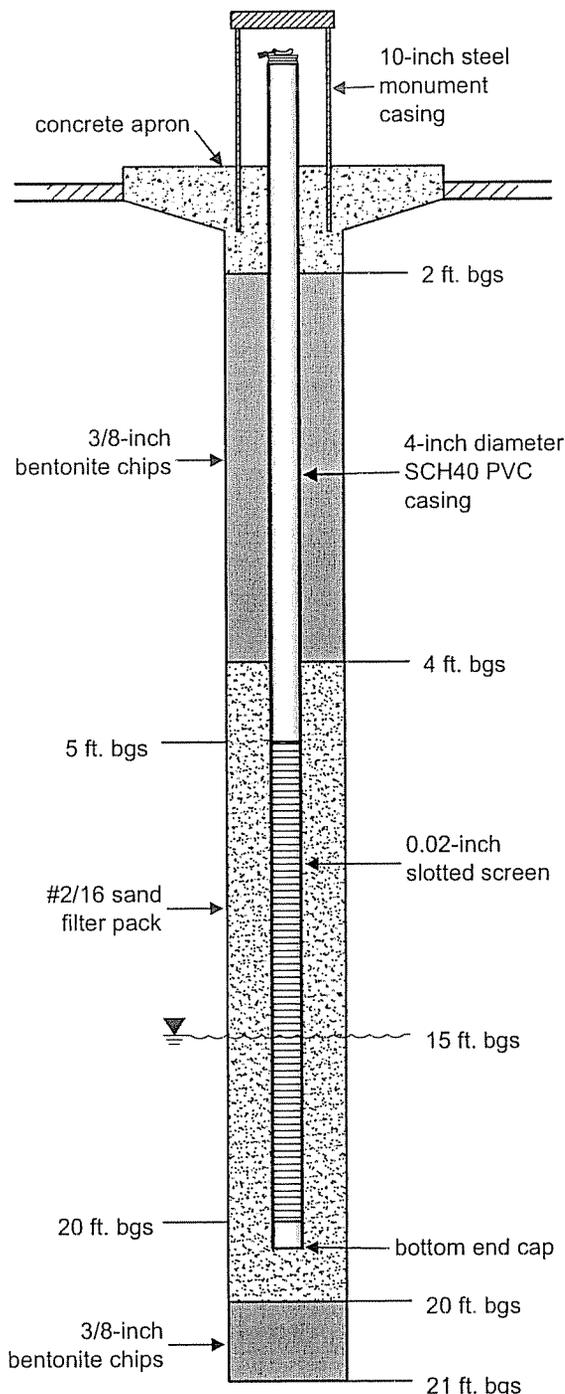
YES     NO;

CENTRALIZER DEPTHS:     ,     

**SURVEY INFORMATION**

TOC ELEVATION: 19.52  
 GROUND ELEVATION: Not Measured  
 NORTHING CORD. 452019.9  
 EASTING CORD. 1457359.4  
 COORDINATE SYSTEM: State Plane NAD 27  
 DATE SURVEYED: 20 July 2004  
 SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MWLF2A**





**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 28 June 2004  
 WELL COMPLETED: 28 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: I.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 32 feet  
 FILTER PACK: #2/16 Monterey sand

EMPLACEMENT METHOD:

POURED     TREMMIED

BENTONITE SEAL: 3/8-in. chips

EMPLACEMENT METHOD:

POURED     TREMMIED

ANNULAR SEAL: NA

POURED     TREMMIED

**CASING INFORMATION**

BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)

SLOT SIZE: 0.020-inch

CENTRALIZERS USED?

YES     NO;

CENTRALIZER DEPTHS: 16'

**SURVEY INFORMATION**

TOC ELEVATION: 14.88

GROUND ELEVATION: Not Measured

NORTHING CORD. 450758.2

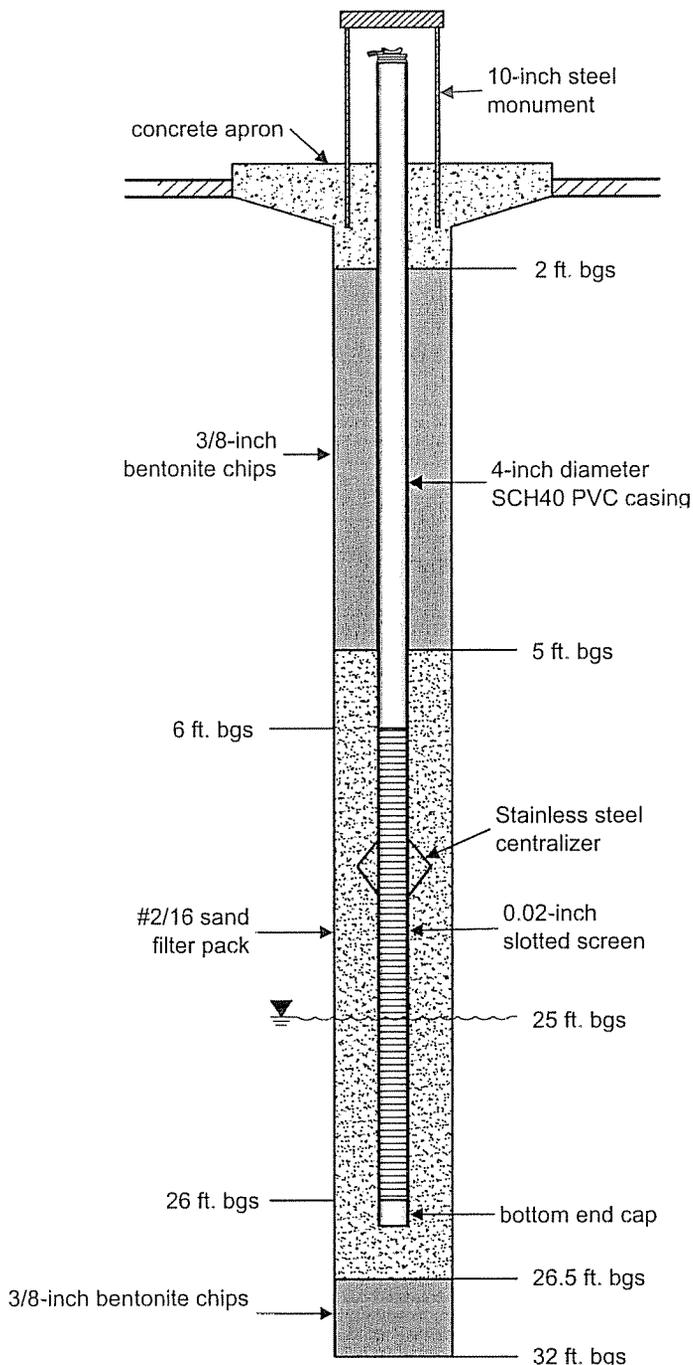
EASTING CORD. 1458080.5

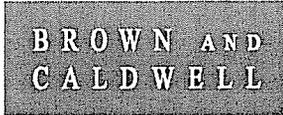
COORDINATE SYSTEM: State Plane NAD 27

DATE SURVEYED: 20 July 2004

SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MWLF4A**





**DRILLING INFORMATION**

DRILLING LOCATION: Parcel E  
 DRILLING STARTED: 25 June 2004  
 WELL COMPLETED: 25 June 2004  
 PERMIT No. NA

DRILLING CO.: Resonant Sonic International (RSI)  
 LEAD DRILLER: S. Knight  
 LICENSE: #802334  
 DRILLING RIG MODEL: Barber DK40  
 DRILLING METHOD: sonic  
 AUGER/CASING DIAMETER: I.D. 8 in., O.D. 8-5/8 in.

**BORING INFORMATION**

TOTAL BORING DEPTH: 55 feet  
 FILTER PACK: #2/16 Monterey sand  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 BENTONITE SEAL: 3/8-in. chips  
 EMPLACEMENT METHOD:  
 POURED     TREMMIED  
 ANNULAR SEAL: 5% bentonite/cement slurry  
 POURED     TREMMIED

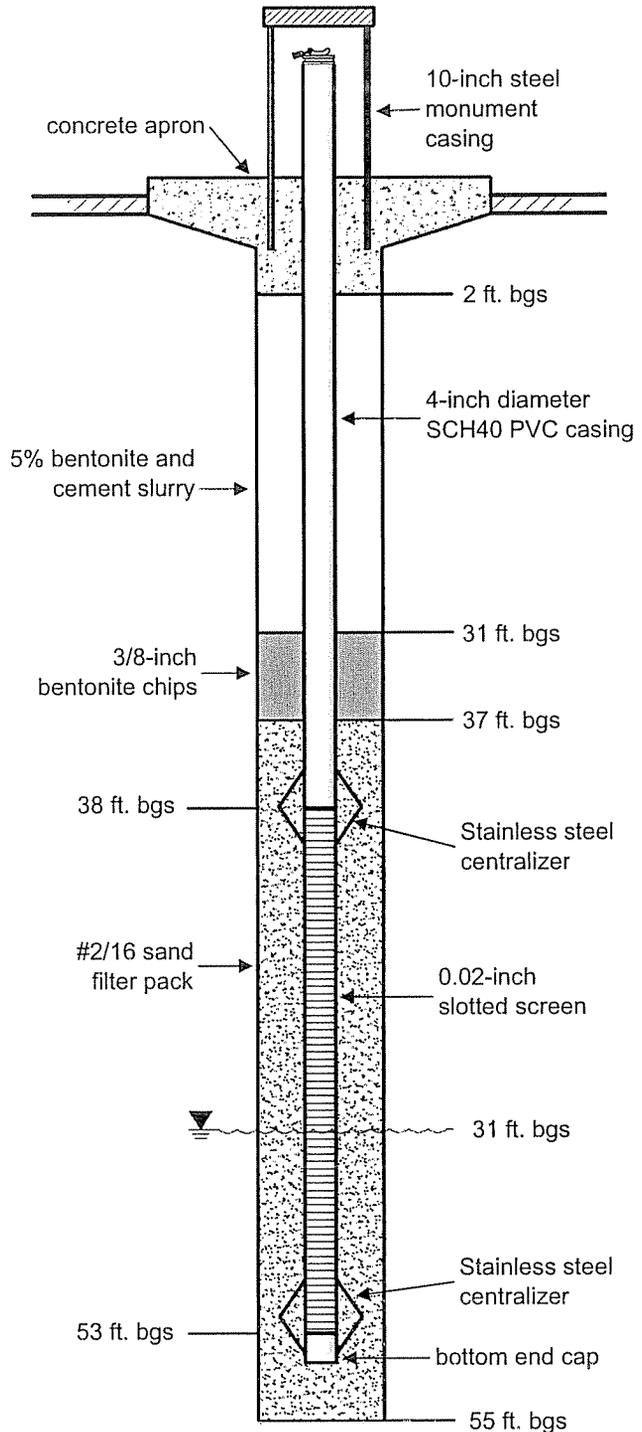
**CASING INFORMATION**

BLANK: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SCREEN: 4-in. dia. SCH40 PVC (Campbell Monoflex)  
 SLOT SIZE: 0.020-inch  
 CENTRALIZERS USED?  
 YES     NO;  
 CENTRALIZER DEPTHS: 38, 53

**SURVEY INFORMATION**

TOC ELEVATION: 14.4  
 GROUND ELEVATION: Not Measured  
 NORTHING CORD. 450790.1  
 EASTING CORD. 1458039.3  
 COORDINATE SYSTEM: State Plane NAD 27  
 DATE SURVEYED: 20 July 2004  
 SURVEYOR: Meridian Surveying Engineering, Inc.

**IR01MWLF4B**



**APPENDIX J5**  
**SOIL BORING AND GMP INSTALLATION LOGS FOR LANDFILL GAS TCRA**

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**LIST OF EXTRACTION WELL AND GAS MONITORING PROBE BORING AND WELL CONSTRUCTION LOGS**

---

EX-1	GMP08A
EX-2	GMP09
EX-3	GMP10
EX-4	GMP11
EX-5	GMP11A
EX-6	GMP12
EX-7	GMP13
EX-8	GMP14
EX-9	GMP15
EX-10	GMP16
GMP01	GMP17
GMP01A	GMP18
GMP02	GMP19
GMP02A	GMP20
GMP03	GMP21
GMP03A	GMP22
GMP04	GMP23
GMP04A	GMP24
GMP05	GMP25
GMP05A	GMP26
GMP05B	GMP27
GMP06	GMP28
GMP06A	GMP29
GMP06B	GMP30
GMP07	GMP31
GMP07A	GMP32
GMP08	

---



Tetra Tech EM Inc.

### Log of Boring: GMP01

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 18.23

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG01.
1						CL	SANDY CLAY: dark gray (10YR 4/1); 70% lean clay; 30% sand, increasing to well graded; decrease in moisture content	
2								
3								
4								
5								
6								
7								
8								
9						SC	Well-graded CLAYEY SAND: dark bluish gray (5B 4/1); increase in moisture content; occasional gravel	
10								
11								
12								
13								
14							Total depth of boring = 14 feet	
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								



Tetra Tech EM Inc.

### Log of Boring: GMP01A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 18.80

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP01A IS A REPLACEMENT FOR GMP01. LITHOLOGY IS FROM BORING SG01.
1						CL	SANDY CLAY: dark gray (10YR 4/1); 70% lean clay; 30% sand, increasing to well graded; decrease in moisture	
2								
3								
4								
5								
6								
7								
8								
9						SC	Well-graded CLAYEY SAND: dark bluish gray (5B 4/1); increase in moisture content; occasional gravel	
10								
11								
12								
13								
14							Total depth of boring = 14 feet	
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
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Tetra Tech EM Inc.

### Log of Boring: GMP02

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 17.91

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG02.
1						cl	SANDY CLAY with organic matter (grass): dark grayish brown (10YR 4/2)	
2						SANDY CLAY with gravel: very dark gray (10YR 3/1); 20% gravel (up to 1-inch diameter)		
3								
4								
5								
6								
7								
8							SANDY CLAY with gravel: dark greenish gray (5BG4/1); 20% gravel; 10% sand - 20% well graded	
9								
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13								
14							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP02A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 18.60

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL	RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0								Ground Surface	NOTE: GMP02A IS A REPLACEMENT FOR GMP02. LITHOLOGY IS FROM SG02 BORING.
1							CL	SANDY CLAY with organic matter (grass): dark grayish brown (10YR 4/2)	
2								SANDY CLAY with gravel: very dark gray (10YR 3/1); 20% gravel (up to 1-inch diameter)	
3									
4									
5									
6									
7									
8								SANDY CLAY with gravel: dark greenish gray (5BG 4/1); 20% gravel; 10% sand - 20% well graded	
9									
10									
11									
12							SW	Well-graded SAND with gravel and clay: brown (10YR 4/2); saturated at 13 feet; 10% gravel; 10% clay	
13									
14								Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP03

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 18.43

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG03.
1						CL	SANDY CLAY with organic matter (grass): dark grayish brown(10YR 4/2)	
2						SC	SANDY CLAY with gravel: dark gray (10YR 4/1); 10% gravel (up to 1-inch diameter)	
3							CLAYEY SAND with gravel: dark bluish gray (5B 4/1); 30% clay; 25% gravel	
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15							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP03A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 17.50

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP03A IS A REPLACEMENT FOR GMP03. LITHOLOGY WAS LOGGED FROM BORING SG03.
1						CL	SANDY CLAY with organic matter (grass): dark grayish brown (10YR 4/2)	
2							SANDY with gravel: dark gray (10YR 4/1); 10% gravel (up to 1-inch diameter)	
3						SC	CLAYEY SAND with gravel: dark bluish gray (5B 4/1); 30% clay; 25% gravel	
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15							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP04

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.51

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						CL	CLAY with sand: dusky red (2.5YR 4/2); fine-grained sand	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG04.
2				SANDY CLAY with gravel: dark gray (7.5YR 4/1); fine- to medium-grained sand				
3				CLAY with sand: brown (7.5YR 4/4); slightly moist; fine- to medium-grained sand				
4				SANDY CLAY with gravel: dark gray (7.5YR 4/1); slightly moist; 30 to 40% fine- to medium-grained sand				
5						SC	Increase in sand content to a CLAYEY SAND: greenish gray (5G/5/i); slightly moist, increasing to moist	
6						CL	CLAY with sand: very dark grayish brown (10YR 3/2); moist; 10% fine-grained sand	
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14							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP04A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.60

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP04A IS A REPLACEMENT FOR GMP04. LITHOLOGY IS FROM BORING SG04.
1						CL	CLAY with sand: dusky red (2.5YR 4/2); fine-grained sand	
2							SANDY CLAY with gravel: dark gray (7.5YR 4/1); fine- to medium-grained sand	
3							CLAY with sand: brown (7.5YR 4/4); slightly moist; fine- to medium-grained sand	
4							SANDY CLAY with gravel: dark gray (7.5YR 4/1); slightly moist; 30 to 40% fine- to medium-grained sand	
5								
6								
7								
8								
9						SC	Increase in sand content to CLAYEY SAND: greenish gray (5G/5/i); slightly moist, increasing to moist	
10						CL	CLAY with sand: very dark grayish brown (10YR 3/2); moist; 10% fine-grained sand	
11								
12								
13								
14							Total depth of boring = 14 feet	
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**Tetra Tech EM Inc.**

### Log of Boring: GMP05

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 14.51

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 04/15/02

**Completed:** 04/15/02

**Boring Depth (feet bgs):** 14.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH EMI

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0						SC	Ground Surface	
1						CL	Well-graded CLAYEY SAND: dark gray (10YR 4/1); moist	
2							SANDY CLAY: very dark grayish brown (2.5Y 3/2); slightly moist; more fine- to medium-grained sand, subangular to subrounded	
3							SANDY CLAY: dark gray (5Y 4/1); with occasional gravel	
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14							Boring not logged from 12 to 14 feet	
15							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP05A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL):

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 13.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0						SC	Ground Surface	NOTE: GMP05A IS A REPLACEMENT WELL FOR GMP05. LITHOLOGY IS FROM BORING SG05A.
1						CL	Well-graded CLAYEY SAND: dark gray (10YR 4/1); moist	
2							SANDY CLAY: very dark grayish brown (2.5Y 3/2); slightly moist; more fine- to medium-grained sand; subangular to subrounded	
3								
4								
5							SANDY CLAY: dark gray (5Y 4/1); with occasional gravel	
6								
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13							Boring not logged from 12 to 13 feet	
14							Total depth of boring = 13 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP05B

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 15.40

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 11/25/02

Completed: 11/25/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches):

Logged By: KATHY VENDENHEUVEL

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SC	Well-graded CLAYEY SAND: dark gray (10YR 4/1); moist	NOTE: GMP05B IS A REPLACEMENT FOR GMP05A. LITHOLOGY IS FROM BORING SG05A.
2						CL	SANDY CLAY: very dark grayish brown (2.5Y 3/2); slightly moist; more fine- to medium-grained sand; subangular to subrounded	
3							SANDY CLAY: dark gray (5Y 4/1); with occasional gravel	
4								
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12								
13							Boring not logged from 12 to 14 feet	
14							Total depth of boring = 14 feet	
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**Tetra Tech EM Inc.**

**Log of Boring: GMP06**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 17.03

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 04/15/02

**Completed:** 04/15/02

**Boring Depth (feet bgs):** 14.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SC	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); slightly moist; fine- to medium-grained sand; subangular to subrounded	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG06.
2								
3						CL	LEAN CLAY: reddish brown (3.5Y 4/4); 5 to 10% fine-grained sand; color changes to very dark grayish brown (2.5Y 3/2); increase in sand content	
4							Decreasing sand content to about 20%	
5								
6								
7								
8								
9						SC	CLAYEY SAND with gravel: very dark gray (N3/); slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter; no staining	
10								
11								
12								
13								
14							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP06A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL):

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP06A IS A REPLACEMENT FOR GMP06. LITHOLOGY IS FROM BORING SG06.
1						SC	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); slightly moist; fine- to medium-grained sand; subangular to subrounded	
2						CL	LEAN CLAY: reddish brown (3.5Y 4/4); 5 to 10% fine-grained sand; color changes to very dark grayish brown (2.5Y 2/3); increase in sand content	
3						CL	Decreasing sand content to about 20%	
4						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
5						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
6						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
7						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
8						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
9						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
10						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
11						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
12						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
13						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
14						SC	CLAYEY SAND with gravel: very dark grey; slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter	
15							Total depth of boring = 14 feet	
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**Tetra Tech EM Inc.**

**Log of Boring: GMP06B**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 15.10

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 11/25/02

**Completed:** 11/25/02

**Boring Depth (feet bgs):** 14.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHER

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP06B IS A REPLACEMENT FOR GMP06A. LITHOLOGY IS FROM BORING SG06.
1						SC	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); slightly moist; more fine- to medium-grained sand; subangular to subrounded	
2						CL	LEAN CLAY: reddish brown (3.5Y 3/2); 5 to 10% fine-grained sand; color changes to very dark grayish brown (2.5Y 3/2); increase in sand content	
3						CL	Decreasing sand content to about 20%	
4						SC	CLAYEY SAND with gravel: very dark gray (N3/); slightly moist; gravel and sand are serpentinite in content; sand is well graded; gravel up to 1-inch diameter; no staining	
5								
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8								
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13								
14							Total depth of boring = 14 feet	
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Tetra Tech EM Inc.

### Log of Boring: GMP07

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.90

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG07.
0							Asphalt and concrete	
1								
2						CL	Black staining at 1.5 to 2.0 feet CLAY with gravel: 1.5-foot lens of clay contains more gravel; approximately 10% fine-grained gravel; slightly moist; no staining	
3								
4								
5								
6								
7							SANDY CLAY: reddish brown (5YR 4/4); slightly moist; approximately 20% fine- to medium-grained sand; occasional fine gravel; 2-inch lens of fine-grained sand (light gray) at 4.25 feet	
8								
9						GR	Increasing gravel content at 9.5 to 10.5; lens of gravel (serpentine)	
10						CL	SANDY CLAY: very dark (N3/); slightly moist; 70% clay; 30% fine-grained sand; no staining; occasional gravelly layer (about 1 to 2 inches thick); soils saturated at about 11 feet	
11								
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14							Total depth of boring = 14 feet	
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**Tetra Tech EM Inc.**

**Log of Boring: GMP07A**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 15.20

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 09/12/02

**Completed:** 09/12/02

**Boring Depth (feet bgs):** 14.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHER

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP07A IS A REPLACEMENT FOR GMP07. LITHOLOGY IS FROM BORING SG07.
1						CL	CLAY: black staining from 1.5 to 2 feet; reddish brown (5YR 4/4); slightly moist; about 20% fine- to medium-grained sand; occasional fine gravel; 2-inch lens of fine-grained sand (light gray) at 4.25 feet	
2								
3								
4								
5							CLAY with gravel: slightly moist; clay lens from 5.5 to 7 feet containing about 10% fine-grained gravel	
6								
7								
8							CLAY with gravel: very slightly moist; no staining	
9								
10						GR	GRAVEL: Increasing gravel content	
11						CL	At 9.5 to 10.5 feet: gravel lens serpentinite)	
12							SANDY CLAY: very dark gray (N3/); slightly moist; 70% clay; 30% fine-grained; sand; no staining; occasional gravelly layer (about 1 to 2 inches thick); saturated at about 11 feet	
13								
14							Total depth of boring = 14 feet	
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**Tetra Tech EM Inc.**

**Log of Boring: GMP08**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 16.68

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 04/16/02

**Completed:** 04/16/02

**Boring Depth (feet bgs):** 13.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0						CL	Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM SG08 BORING.
1						CL	SANDY CLAY: dark yellowish brown (10YR 3/4); 60% lean clay; 40% fine sand	
2								
3						SP	Poorly graded SAND: coarse-grained, subangular to subrounded	
4						CL	LEAN CLAY with sand: dark yellowish brown (10YR 4/4); slightly moist; about 10% fine-grained sand; no staining	
5								
6							LEAN CLAY: dark reddish brown (5YR 3/4); 2-inch lens of blackish soil at 4.75 feet	
7								
8						SC	CLAYEY SAND: greenish gray (5GY 5/1); slightly moist; about 30% lean clay; serpentinite in content	
9						CL	LEAN CLAY: dark reddish brown (5YR 3/4) slightly moist.	
10						SP	Poorly graded SAND: light gray (10YR 4/2); 100% fine-grained sand; some fines	
11						CL	Lens of slightly sandier material: (20% fine sand) then lean clay from 11 to 16 feet; soils saturated at 13.5 feet	
12								
13							Total depth of boring = 13 feet	
14								
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Tetra Tech EM Inc.

### Log of Boring: GMP08A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 13.10

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/12/02

Completed: 09/12/02

Boring Depth (feet bgs): 12.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP08A IS A REPLACEMENT FOR GMP08. LITHOLOGY IS FROM BORING SG08.
1						CL	SANDY CLAY: very dark brown (10YR 3/1); very slightly moist; 30% sand; occasional gravel	
2								
3								
4						SC	CLAYEY SAND: greenish gray (5G 5/1); fine- to medium-grained	
5						CL	SANDY CLAY: greenish gray (5BG 4/1); occasional gravel	
6	14						Poor recovery from 8 to 12 feet due to cobble/boulder	
7								
8								
9								
10								
11	24							
12							Total depth of boring = 12 feet	
13								
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Tetra Tech EM Inc.

### Log of Boring: GMP09

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 10.46

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/16/02

Completed: 04/16/02

Boring Depth (feet bgs): 10.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG09.
1						CL	LEAN CLAY with sand: dark yellowish brown (10YR 3/4); slightly moist; about 10% fine-grained sand; slightly moist	
2							SANDY CLAY: dark grayish brown (2.5Y 4/2); slightly moist; about 20% fine- to coarse-grained sand; occasional gravel	
3								
4								
5								
6								
7						SP	Poorly graded SAND: olive (5Y 4/3); fine-grained	
8						CL	LEAN CLAY: dark yellowish brown (10YR 3/4); very little to no sand	
9							SANDY CLAY: slightly moist; increasing clay content with depth	
10							Total depth of boring = 10 feet	
11								
12								
13								
14								
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Tetra Tech EM Inc.

### Log of Boring: GMP10

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 11.83

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 7.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: KATHY VANDENHEUVEL

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SW SC	Well-graded SAND: dark grayish brown (10 YR 4/2)	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG23.
2							CLAYEY SAND with gravel: very dark gray (10YR 3/1); slightly moist	
3						SW	Well-graded SAND with clay and gravel: reddish brown (5YR4/3); 100% clay; 40% gravel (up to 1-inch diameter)	
4						CL	SANDY LEAN CLAY with gravel: brown (10YR 4/3); color changes to very dark gray (10YR 3/1)	
5								
6								
7							Total depth of boring = 7 feet	
8								
9								
10								
11								
12								
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Tetra Tech EM Inc.

### Log of Boring: GMP11

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 14.94

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 6.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG24.
1						CL	LEAN CLAY with sand: very dark grayish brown (10YR 3/2); moist; 10% sand; sand lens at 3.5 feet for 2 inches in depth	
2								
3							Soil saturated at 4 feet	
4								
5							Refusal at 6 feet; concrete chunks in sampler shoe	
6							Total depth of boring = 6 feet	
7								
8								
9								
10								
11								
12								
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Tetra Tech EM Inc.

### Log of Boring: GMP11A

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.30

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 11/25/02

Completed: 11/25/02

Boring Depth (feet bgs): 6.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: KATHY VENDENHEUVAL

Logging Consultant: TTEMI

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: GMP01A IS A REPLACEMENT FOR GMP11. LITHOLOGY IS FROM BORING SG24.
1						CL	LEAN CLAY with sand: very dark grayish brown (10YR 3/2); moist; 10% sand; sand lens at 3.5 feet for 2 inches in depth	
2							Soil saturated at 4 feet	
3							Groundwater not encountered; refusal at 6 feet; concrete chunks in sampler shoe	
4								
5								
6							Total depth of boring = 6 feet	
7								
8								
9								
10								
11								
12								
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Tetra Tech EM Inc.

### Log of Boring: GMP12

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 17.32

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 04/15/02

Completed: 04/15/02

Boring Depth (feet bgs): 13.50

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: LITHOLOGY WAS LOGGED FROM BORING SG25.
1						CL	Well-graded SANDY CLAY: dark gray; slightly moist, increasing in moisture content; 30% sand	
2								
3								
4								
5								
6								
7								
8								
9							Interbedded green and brown sand lenses from 8 to 12 feet	
10								
11								
12								
13								
14							Total depth of boring = 13.5 feet	
15								
16								
17								
18								
19								
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**Tetra Tech EM Inc.**

### Log of Boring: GMP13

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 22.60

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 05/31/02

**Completed:** 05/31/02

**Boring Depth (feet bgs):** 19.50

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1	9					SP	3-Inch asphalt and road base	
2	9						FILL: poorly graded sand with clay and gravel	
3	9					SC	CLAY and gravel: brown; moist; medium- to fine-grained sand; about 10% fine sand, with 60% medium-grained gravel	
4	9						CLAY and gravel: gravels are serpentine and chert in content	
5	9							
6	9					CL	CLAYEY SAND: yellowish brown; moist; 70% fine-grained sand; 30% clay	
7	9							
8	18							
9	18							
10	18							
11	18							
12	18							
13	18							
14	18							
15	18							
16	18							
17	18					KF	Serpentine bedrock: slightly weathered, very hard	
18	18							
19	18							
20							Total depth of boring = 19.5 feet	
21								
22								
23								
24								
25								
26								
27								
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Tetra Tech EM Inc.

### Log of Boring: GMP14

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 21.70

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 05/31/02

Completed: 05/31/02

Boring Depth (feet bgs): 10.50

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHNER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1	18					CL	3-Inch asphalt and road base	
2	18						SANDY CLAY with gravel: dark brown; 65% clay; 30% fine-grained sand; 5% gravel	
3						SC	CLAYEY SAND with gravel: dark brown to black; slightly moist; 60% medium- to firm sand; 30% lean clay; 60% serpentine gravels, with grain from serpentine	
4	6							
5	9							
6								
7	0							
8	18							
9								
10	0							
11							Total depth of boring = 10.5 feet	
12								
13								
14								
15								
16								
17								
18								
19								
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**Tetra Tech EM Inc.**

**Log of Boring: GMP15**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 19.90

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 05/31/02

**Completed:** 05/31/02

**Boring Depth (feet bgs):** 12.50

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHER

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SP	0-3-Inch asphalt and road base	
2							FILL, poorly graded SAND with clay and gravel: dark brown; 70% medium- to fine-grained sand; 20% clay; 10% gravel	
3								
4								
5								
6	13							
7								
8								
9	4					GP	Poor recovery due to gravel lens at 8 to 10 feet; subrounded to subangular; gravel is medium- to fine-grained.	
10								
11	13					KF	Soil saturated	
12							BEDROCK: serpentine and chert, very hard	
13							Total depth of boring = 12.5 feet	
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
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Tetra Tech EM Inc.

### Log of Boring: GMP16

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 17.50

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 05/31/02

Completed: 05/31/02

Boring Depth (feet bgs): 10.50

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						CL	0 to 3 inches asphalt and road base	
2							SANDY CLAY: dark brown; slightly moist; 80% clay; 20% fine-grained sand	
3								
4								
5								
6	18							
7								
8								
9	18					KF	BEDROCK: serpenite and greenstone	
10								
11							Total depth of boring = 10.5 feet	
12								
13								
14								
15								
16								
17								
18								
19								
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Tetra Tech EM Inc.

### Log of Boring: GMP17

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.50

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 05/31/02

Completed: 05/31/02

Boring Depth (feet bgs): 10.50

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SC	3-Inch asphalt and road base	
2							CLAYEY SAND: brown; moist; 70% medium- to fine-grained sand; 30% lean clay	
3								
4								
5						KF	SERPENTINE BEDROCK: serpenite and greenstone; slightly moist	
6	16						Iron oxide staining in bedrock at 8 feet	
7								
8	18							
9	18						Increasing moisture content at 9 feet	
10								
11							Total depth of boring = 10.5 feet	
12								
13								
14								
15								
16								
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18								
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**Tetra Tech EM Inc.**

**Log of Boring: GMP18**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 15.10

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 05/31/02

**Completed:** 05/31/02

**Boring Depth (feet bgs):** 13.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SC	3-Inch asphalt and road base	
2							Fill CLAYEY SAND: brown; slightly moist; 80% fine-grained sand; 20% lean clay; occasional gravel	
3							CLAYEY SAND: brown; slightly moist; 70% medium- to fine-grained sand; 20% lean clay	
4								
5								
6	24					GP	Poorly graded GRAVEL: slightly moist; medium- to fine-grained gravels; some angular to subrounded	
7								
8								
9								
10								
11	18							
12								
13	18						Possible bedrock at 13 feet	
14							Total depth of boring = 13 feet	
15								
16								
17								
18								
19								
20								
21								
22								
23								
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**Tetra Tech EM Inc.**

### Log of Boring: GMP19

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 13.80

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 05/31/02

**Completed:** 05/31/02

**Boring Depth (feet bgs):** 5.50

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHAR

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	NOTE: BORING WAS LOGGED FROM CUTTINGS.
1						SC	3-Inch asphalt and road base	
2							CLAYEY SAND with gravel: medium- to fine-grained sand; 20% clay; 5 to 10% gravel	
3							Hit something hard at 5.5 feet	
4							Total depth of boring = 5.5 feet	
5								
6								
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8								
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Tetra Tech EM Inc.

### Log of Boring: GMP20

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 9.60

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 06/07/02

Completed: 06/07/02

Boring Depth (feet bgs): 7.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1	24					CL	SANDY CLAY: dark yellowish brown (10YR 4/4); slightly moist; lean; about 30% fine-grained sand	
2							At 3 feet, small glass fragment and few wood chips (less than 1 inch)	
3	18						At 4 feet, color changes to very dark grayish brown (10YR 3/2); sand content increases to about 40%; increasing moisture content at 5 feet	
4	18							
5								
6	12							
7								
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**Tetra Tech EM Inc.**

**Log of Boring: GMP21**

**Project:** GMP WELLS

**Project No:** DO 003

**Location:** PARCEL E LANDFILL

**Ground Surface Elevation (feet MSL):** 10.30

**Top of Casing Elevation (feet MSL):** NA

**Drilling Method:** HSA

**Boring Started:** 06/07/02

**Completed:** 06/07/02

**Boring Depth (feet bgs):** 7.00

**Boring Diameter (inches):** 5.50

**Casing Diameter (inches):** 0.75

**Logged By:** REBECCA LESHER

**Logging Consultant:** TETRA TECH

**Drilling Company:** GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1	12					SC	Grass/trash at surface	
2						CL	Poorly graded CLAYEY SAND: brown (10YR 4/3); slightly moist; fine- to medium-grained sand; about 30% lean clay	
3	18						LEAN CLAY with sand: dark yellowish brown (10YR 4/4); slightly moist; about 10% fine-grained sand	
4	12						At 5 feet, small root (0.25 inch in diameter)	
5							At 6.5 feet, color changes to dark brown (7.5YR 3/2)	
6	24						Total depth of boring = 7 feet	
7								
8								
9								
10								
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12								
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18								
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Tetra Tech EM Inc.

### Log of Boring: GMP22

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 19.20

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/11/02

Completed: 09/11/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SC	Approximately 2 inches of gravel at surface	
2						CLAYEY SAND: brown (7.5YR 4/4); very slightly moist; 60% fine-grained sand; 20% medium-grained sand; 20% clay		
3								
4								
5								
6	6							
7								
8								
9								
10								
11	6						Slight petroleum odor at 12 feet	
12								
13	6						Saturated at 14 feet	
14							Total depth of boring = 14 feet	
15								
16								
17								
18								
19								
20								
21								
22								
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33								
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35								



Tetra Tech EM Inc.

### Log of Boring: GMP23

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 19.40

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/11/02

Completed: 09/11/02

Boring Depth (feet bgs): 14.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						SW	Gravel and asphalt	
2							Well-graded SAND WITH CLAY: very dark grayish brown (10YR 3/2); 40% medium-grained; 30% coarse-grained; 20% fine-grained; 10% lean clay	
3								
4								
5								
6	9					SC	CLAYEY SAND: pale brown (10YR 6/3); slightly moist; 40% medium-grained; 10% coarse-grained; 20% fine-grained; 30% clay; no odor or staining	
7								
8								
9								
10								
11	18						Black staining and petroleum odor at 12 feet; moist	
12								
13	8						Very moist at 13.5 feet; 1-inch piece of glass	
14							Total depth of boring = 14 feet	
15								
16								
17								
18								
19								
20								
21								
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35								



Tetra Tech EM Inc.

### Log of Boring: GMP24

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 16.80

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/11/02

Completed: 09/11/02

Boring Depth (feet bgs): 13.50

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHER

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						CL	3-inch asphalt surface	
2							SANDY CLAY: brown (7.5YR 4/4); slightly moist; 30% fine- to medium-grained sand; 70% clay	
3								
4								
5								
6	9							
7								
8								
9								
10								
11	24					SC	CLAYEY SAND: very dark grayish brown (2.5Y 3/2); slightly moist; 40% medium- to fine-grained and 30% coarse-grained sand; 30% lean clay; slaturated at 13 feet	
12								
13	9							
14							Total depth of boring = 13.5 feet	
15								
16								
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Tetra Tech EM Inc.

### Log of Boring: GMP25

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 15.50

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/11/02

Completed: 09/11/02

Boring Depth (feet bgs): 12.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						GW	3-inch asphalt cover	
2							Well-graded GRAVEL with serpentine rocks: slightly moist; minor iron oxide staining; no odor	
3								
4								
5								
6	5							
7								
8								
9								
10								
11	24					CL	CLAY: greenish gray (5G 5/1); 90% lean clay, 10% fine-grained sand; saturated at 11 feet	
12							Total depth of boring = 12 feet	
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
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31								
32								
33								
34								
35								



Tetra Tech EM Inc.

### Log of Boring: GMP26

Project: GMP WELLS

Project No: DO 003

Location: PARCEL E LANDFILL

Ground Surface Elevation (feet MSL): 15.40

Top of Casing Elevation (feet MSL): NA

Drilling Method: HSA

Boring Started: 09/11/02

Completed: 09/11/02

Boring Depth (feet bgs): 12.00

Boring Diameter (inches): 5.50

Casing Diameter (inches): 0.75

Logged By: REBECCA LESHAR

Logging Consultant: TETRA TECH

Drilling Company: GREGG

DEPTH (FEET)	DRIVE INTERVAL RECOVERY (IN)	SAMPLE ID	OVM (PPM)	WATER LEVEL	GRAPHIC LOG	ASTM SOIL TYPE	DESCRIPTION	COMMENTS
0							Ground Surface	
1						CL	3-inch asphalt at surface	
2							SANDY CLAY: dark greenish gray (5g 4/1); 30% medium- to fine-grained and 5% coarse-grained sand	
3								
4								
5							At 5 feet, slightly moist	
6	9							
7							At 10 feet, occasional gravel; serpentinite in content	
8								
9								
10								
11	7						Saturated at 12 feet	
12							Total depth of boring = 12 feet	
13								
14								
15								
16								
17								
18								
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35								

Project HPS PARCEL E GAS MONITORING

Logged By JIM ANDERSON

Boring No. GMP-27

Project Number 02-125.02

Date Drilled 11 FEB 2004

Sheet 1 Of 1

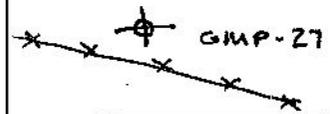
Location PARCEL E

Total Depth 23.5'

Surface Elevation 22.15'

Boring Diameter ~8"

Boring Location Sketch



Drillers WEST HAZ MAT

Method HOLLOW STEM AUGER

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0 - 2.5			SEE AIR LOG		ASPHALT (2.4")	CH	ASPHALT (2.4") BARBERIC
2.5 - 5	5/17					CH	SANDY CLAY w/ GRAVEL (CH), DARK OLIVE BROWN (2.5Y3/3), MOIST SOFT, 60-70% 50-60% CLAY, MEDIUM TO HIGH PLASTICITY, 20-30% FINE TO COARSE SAND, ANGULAR TO SUB-ANGULAR, 10-20% FINE TO COARSE GRAVEL TO 5", ANGULAR TO ROUNDING (FINE GRAVEL MORE ROUNDED), 0-5% SHELLS, GRAVEL SERPENTINE
5 - 29						CH	25.5' CLAY DECREASES, YELLOWISH BROWN (10YR5/4), 40-50% CLAY, 30-40% F-C SAND, 10-20% F-C GRAVEL TO 1.5", MEDIUM STIFF  29' SAMPLE FROM 5' RETRIEVED - WET
15 - 20						SC/CH	@15' GRAVEL DECREASES, SAND INCREASING CLAYBY SAND / SANDY CLAY (SC/CH) OLIVE BROWN (2.5Y4/3), MEDIUM STIFF, 50-60% CLAY, 40-50% F-W SAND
20 - 22.5						GW	@20' DRILLING BECOMES HARDER / WEATHERED BEDROCK WELL GRADED GRAVEL (GW), 95-100% SERPENTINE  ~2.5" SILT TRAP
22.5 - 23.5							BOTTOM OF BOREHOLE @ 23.5'

Casing Diameter	<u>2"</u>	Casing Length	<u>4.2'</u>	From	<u>~0.5'</u>	To	<u>4.7'</u>
Screen Size	<u>0.010"</u>	Screen Length	<u>17.5'</u>	From	<u>4.7'</u>	To	<u>22.2'</u>
		Sand Type	<u>#1/20</u>	From	<u>4'</u>	To	<u>23.5'</u>
		Bentonite Type	<u>ENVIRO BLOCK MED</u>	From	<u>2'</u>	To	<u>4'</u>
		Cement/Grout	<u>PORTLAND TYPE I/II</u>	From	<u>1'</u>	To	<u>2'</u>
		Surface Completion	<u>12" FLUSH MOUNT BOX</u>				



Project HPS PARCEL E GAS MONITORING

Logged By JIM ANDERSON

Boring No. GMP-28

Project Number 02-125.02

Date Drilled 12 FEBRUARY 2004

Sheet 1 Of 1

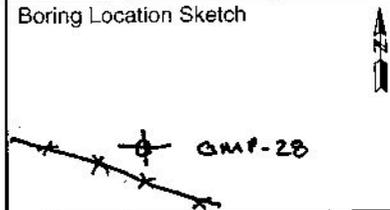
Location PARCEL E

Total Depth 21.5'

Boring Location Sketch

Surface Elevation 20.80

Boring Diameter B"



Drillers WEST HAZ MAT

Method HOLLOW STEM AUGER

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/1st sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0-4						CH	ASPHALT 4 TO 4" BACROCK 2 1/2"
4-5	10/12/13					CH	SANDY CLAY W/ GRAVEL (CH), DARK GRAY (2.574/1), MOIST SOFT 45-55% FAT CLAY, MEDIUM PLASTICITY, 25-35% FINE TO COARSE SAND, 10-20% FINE TO COARSE GRAVEL, ANGULAR TO SUBANGULAR.
5-7	7/8/11					SW	WELL GRABBED SAND (SW), DARK GREENISH BROWN (2.574/2), LOOSE 60-70% FINE TO COARSE SAND, ANGULAR, 25-35% FINE TO COARSE GRAVEL, 0-20% S-10% SHELLS, 5-10% CLAY.
7-9	9/11/13					CH	SANDY CLAY W/ GRAVEL (CH), OLIVE BROWN (2.574/3), MED STIFF TO STIFF, 60-70% FAT CLAY, 20-30% F-C SAND, 5-10% F-C GRAVEL. SOME SAND RICH LENSES PRESENT (2" THICK)
9-12						GC	@9' TOP OF SAMPLE WET CLAYEY GRAVEL W/ SAND (GC), BROWN (7.574/3), SATURATED, MED. DENSE, 35-45% F-C GRAVEL, 30-40% FAT CLAY, 15-25% F-C SAND (WEATHERED CHERT)
12-21.5							@12' DRILLING RATE INCREASES  BOTTOM OF BOREHOLE @ 21.5'

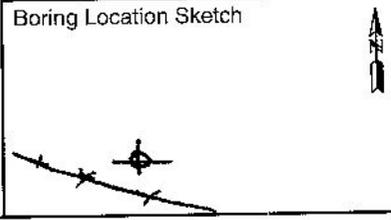
Casing Diameter 2" Casing Length 5.7' From 0.50' to 6.2'  
 Screen Size 0.010" Screen Length 15' From 5.7' to 20.7'  
 Sand Type LOWESTAR #1/20 From 5' To 21.5'  
 Bentonite Type EMCO PLUS NEGATIVE From 3' To 5'  
 Cement/Grout PORTLAND TYPE III From 1.0' To 3'  
 Surface Completion 12" EMCO TRAFFIC FLUSH MOUNT  
1.0' TO SURFACE RADI-MIX



Project HPS Parcel E  
 Project Number 02-125.02  
 Location Parcel E  
 Surface Elevation 18.70

Logged By JIM ANDERSON  
 Date Drilled 12 FEBRUARY 2004  
 Total Depth 19.5'  
 Boring Diameter 8"  
 Drillers WEST HAZ MAT  
 Method HOLLOW STEM AUGER

Boring No. GMP-29  
 Sheet 1 Of 1



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) P-zone/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0						AC GC	ASPHALT BASE ROCK 2 1/2"
0-5	4 1/2 / 5					CH	SANDY CLAY W/ GRAVEL (CH), DARK OLIVE GRAY (5Y 3/2), MOIST, MEDIUM STIFF, 50-60% FAT CLAY, HIGH PLASTICITY, 25-35% FINE TO COARSE SAND, ANGULAR TO SUBROUNDED, 10-20% FINE TO COARSE GRAVEL TO 3", ANGULAR TO ROUNDED
5-10	7 1/2 / 5					SP CH	POORLY GRADED SAND (SP), OLIVE (5Y 4/2), LOOSE, 70-80% F-M SAND, 15-25% SHELLS, 0-5% F-C GRAVEL, 0-2% DEBRIS (GLASS) SANDY CLAY (CH), DARK GRAYISH BROWN (2.5Y 4/2), MED. STIFF, 60-70% FAT CLAY, 25-35% F-M SAND, 0-5% F-C GRAVEL, GRAVEL PREDOM
10.5							SEEPAGE ROCK IN SHOE AT 10.5'
10.5-15	8 1/2 / 5					GC	WEATHERED BEDROCK - MEDIUM DENSE - DENSE MOIST TO WET, 40-50% F-C GRAVEL, ANGULAR, SLICKENSIDES, 25-35% CLAY, 20-30% F-C SAND. @ 15' SATURATED
19.5							BOTTOM OF BOREHOLE @ 19.5'

\* PRIOR TO REMOVING APPROXIMATELY 3" OF CASING AFTER INSTALLED TO SURFACE



Casing Diameter	<u>9" x 8" 2"</u>	Casing Length	<u>6.2' *</u>	From	<u>0' *</u>	To	<u>6.2'</u>
Screen Size	<u>0.010</u>	Screen Length	<u>12.5'</u>	From	<u>6.2'</u>	To	<u>18.7'</u>
		Sand Type	<u># 1/20</u>	From	<u>5.5'</u>	To	<u>19.5'</u>
		Bentonite Type	<u>EMEROPUS MEDIUM</u>	From	<u>3.5'</u>	To	<u>5.5'</u>
		Cement/Grout	<u>PORTLAND TYPE II</u>	From	<u>9' 2.5' 1.5'</u>	To	<u>3.5'</u>
		Surface Completion	<u>12" EMCO® TRAFFIC RATED SURFACE MOUNT</u>				
			<u>UPPER 1.5' FINISHED WITH REDI-MIX CONCRETE</u>				

Project HPS PARCEL E GAS MONITORING Logged By JIM ANDERSON

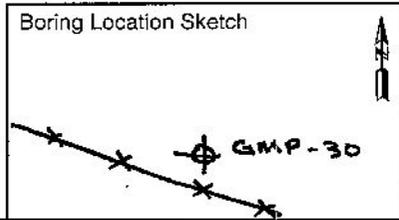
Boring No. GMP-30

Project Number 02-125.02 Date Drilled 12 FEBRUARY 2004

Sheet 1 Of 1

Location PARCEL E Total Depth 18'

Surface Elevation 17.00 Boring Diameter 8"



Drillers WEST HAZ MAT  
Method HOLLOW STEM AUGER

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0-3						AF	ASPHALT 3-4"
3-4						QL	BASEROCK 5-6"
4-5	7/8/11					CH	SANDY CLAY W/ GRAVEL (CH) OLIVE BROWN (2.5Y4/3) MOIST MEDIUM STIFF, 55-65% CLAY, MEDIUM TO HIGH PLASTICITY, 15-25% FINE TO COARSE SAND, 10-20% FINE TO COARSE GRAVEL, ANGULAR TO 4". SAND & GRAVEL INCREASE
5-10	10/11/14					GC	CLAYEY GRAVEL W/ SAND (GC), DARK GREENISH GRAY (10Y4/1), MEDIUM DENSE, WET, 45-55% F-C GRAVEL ANGULAR W/ MINOR ROUNDED (<5%), 25-35% CLAY, 20-30% F-C SAND, ANGULAR WEATHERED SERPENTINE BEDROCK W/ MINOR CHERT AND LITHIC GRAVELS.
17-18							DRILLING RATE INCREASES @ 17' - LESS WEATHERED ROCK BOTTOM OF BOREHOLE @ 18' (17.5' INITIALLY)

Casing Diameter 2" Casing Length 4.5' From 0' To 4.5'  
 Screen Size 0.010" Screen Length 12.5' From 4.5' To 17.0'  
 Sand Type LANESTAR #1/20 From 4' To 18'  
 Bentonite Type EMERSON MEDIUM From 2' To 4'  
 Cement/GROUT QUICK SET From 0 To 2'  
 Surface Completion 12" EMO FLUSH MOUNT BOX



Project HPS PARCEL E GAS MONITORING Logged By JIM ANDERSON

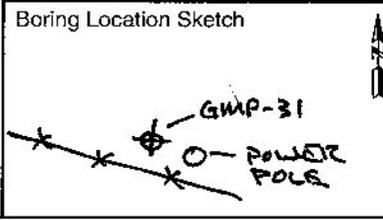
Boring No. GMP-31

Project Number 02-125.02 Date Drilled 13 FEBRUARY 2004

Sheet 1 Of 1

Location PARCEL E Total Depth 17'

Surface Elevation 15.80 Boring Diameter 8"



Drillers WEST HAZ MAT  
Method HOLLOW STEM AUGER

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/sam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0						CH	ASPHALT 2-4" BEDROCK 5-6" SANDY CLAY W/ GRAVEL (CH), OLIVE BROWN (2.5Y4/3), MOIST, MED. STIFF, 65-75% CLAY, MEDIUM PLASTICITY, 20-30% FINE TO COARSE SAND, ANGULAR, 5-15% FINE TO COARSE GRAVEL TO 2' GRAVEL & SAND INCREASE 40-50% CLAY, 30-40% SAND, 10-20% GRAVEL, LIGHT OLIVE BROWN (2.5Y5/4).
5	13/19/8		SEE AIR LOG			GC	WEATHERED SERPENTINE IN SHOE @ 5' CLAYEY GRAVEL W/ SAND (GC), DARK GREENISH GRAY (10Y4/1), MED. DENSE, 40-50% F-C GRAVEL, ANGULAR, 20-30% CLAY IN ZONES (SOME AREAS LITTLE TO NO CLAY), 20-30% F-C SAND, ANGULAR WEATHERED SERPENTINE.  ? WET (ARRAYS WET/MOIST DUE TO ZONES IN BEDROCK)
10	8/19/11						
15	12/18/20						@ 16' WET
17							BOTTOM OF BOREHOLE @ 17' (W DRY) UPON BAILING

\* AFTER SETTING WELL UPPER 16" CUT FROM CASING

Casing Diameter	<u>2"</u>	Casing Length	<u>6'</u>	From	<u>0*</u>	To	<u>~6'</u>
Screen Size	<u>0.010"</u>	Screen Length	<u>10'</u>	From	<u>~6'</u>	To	<u>16'</u>
		Sand Type	<u>LOWSTAR #1/20</u>	From	<u>5'</u>	To	<u>17'</u>
		Bentonite Type	<u>ENVELOPING MEDIUM</u>	From	<u>3'</u>	To	<u>5'</u>
		Cement/Grout	<u>PORTLAND TYPE I/II</u>	From	<u>1'</u>	To	<u>3'</u>
		Surface Completion	<u>12" EMCO TRAFFIC RATE FLUSH MOUNT BOX</u>				



Project HPS PARCEL E GAS MONITORING

Logged By JIM ANDERSON

Boring No. GMP-32

Project Number 02-125.02

Date Drilled 13 FEBRUARY 2004

Sheet 1 Of 1

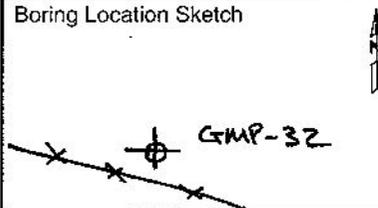
Location PARCEL E

Total Depth 16'

Boring Location Sketch

Surface Elevation 14.45

Boring Diameter 8"



Drillers WEST HAZ MAT

Method HOLLOW STEM AUGER

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0							ASPHALT 3-4" BASE ROCKS 6"
0-5						CH	SANDY CLAY W/ GRAVEL (CH), DARK BROWN (10YR 2/3), MOIST, MEDIUM STIFF, 60-70% CLAY, MEDIUM PLASTICITY, 20-30% FINE TO COARSE SAND, ANGULAR, 5-15% FINE TO COARSE GRAVEL, ANGULAR.
5-10	50 FOR 6					GW	WELL GRADED GRAVEL (GW), HARD 70-80% F-C GRAVEL, ANGULAR, 15-25% FINE TO COARSE SAND, ANGULAR, 5-10% FINES (CLAY), WEATHERED SERPENTINE
10-15	41/50					GW	AS ABOVE DRILLING RATE INCREASES
15-16	50 FOR 6						NO RECOVERY
							BOTTOM OF BOREHOLE @ 16' (WELL DRY @ 1130)
* CASING CUT ~ 6" BELOW SURFACE AFTER SETTING WELL							

Casing Diameter 2" Casing Length 4.75' From 0\* To 4.75'

Screen Size 0.010" Screen Length 10' From 4.75 To 14.75'

Sand Type LOWESTAR #1/20 From 4' To 16'

Bentonite Type ENVIROPLUG MED From 2' To 4'

Cement/Grout PORTLAND TYPE III From 1' To 2'

Surface Completion 12 EMCO TRAFFIC RATED FLUSH MOUNTED BOX



*Jim Anderson*

LOCATION USF Facility / Hester Point BORING DEPTH 10.0 BORING NO. EX-1  
 SURFACE ELEVATION NA DATE 8/8/2002 SHEET 1 OF 1  
 DRILLING METHOD 12" Hollow Stem Auger LOGGED BY Rob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0			Asphalt
	GM		FILL: Silty Gravel with Sand (6M), very dark grayish brown (10YR 3/2), dense, dry to moist, 50% fine to coarse subangular gravel, 25% fine to medium sand, 25% silt, low plasticity; OUM=0, gashed=0 while drilling
5.0	LL		FILL: Sandy lean clay with Gravel (LL), brown (7.5YR 4/2), stiff, dry to moist, moderately plastic; ~20% very fine to fine sand, 5-10% gravel; OUM=0, gashed=0
	CL/ GM		FILL: Clayey sand with Sand (GL) to Silty Gravel with sand (GL), brown (7.5YR 4/2), dense, dry, low plasticity, 60% fine to coarse gravel (sandstone and chert), 25% lean clay to silt, 25% fine sand; OUM=0, gashed=0 while drilling
10.0			
15.0			



PROJECT Hester Point Landfill  
 PROJECT NO. 01-117

LOCATION UCSF facility BORING DEPTH 10.0' BORING NO. EX-2  
 SURFACE ELEVATION NA DATE 8/8/2002 SHEET 1 OF 1  
 DRILLING METHOD SHSA LOGGED BY Bob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0			
	ML		Gandy Silt with gravel (1 ml), light brownish gray (2.54%), very stiff, dry, 70% silt, 10% fine gravel, 20% fine sand
5.0			Feaming moist, olive gray (54%) at 25'
	SM		Silty Sand (SM), brown (104R), loose, moist, 70% fine to coarse, subrounded to subangular sand, 30% silt, micaceous. OUM reads 2 creating
10.0			Gaslock reads +100% (meter at maximum reading), faint odor on open borehole
15.0			

subangular



PROJECT Hunter Point Landfill  
 PROJECT NO. 01-117-03

LOCATION UCSF Facility / Hunter Point BORING DEPTH 10.0 BORING NO. EX-3  
 SURFACE ELEVATION NA DATE 8/8/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" HSA LOGGED BY R. Nelson  
 SAMPLING METHOD \_\_\_\_\_ EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0	ML		Sandy Silt with Gravel (ML) light brown gray (2.5/1/2) very stiff, dry, 70% silt, 10% fine gravel, 20% fine sand
5.0	SM		Silty Sand (SM), brown (10YR 4/3), loose, moist, 70% fine to coarse subrounded to subangular sand, 30% silt, micaeous, trace shell fragments (mostly red 0-2% LEL on cuttings); 0% LEL at driller's location. Gravel and +100% LEL on top of open borehole; approx. 1/2 lb of dry ice was put in hole and allowed to offgas to remove methane from borehole before building well.
10.0		//////	
15.0			



PROJECT Hunter Point Landfill  
 PROJECT NO. 01-117-03

LOCATION Hunter's Point BORING DEPTH 10.0 BORING NO. EX-4  
 SURFACE ELEVATION NA DATE 8/8/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" HSA LOGGED BY Bob Nelson  
 SAMPLING METHOD \_\_\_\_\_ EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0			
	GM		Silty Gravel with Sand (GM), grayish brown (2.57 <sup>5</sup> / <sub>2</sub> ), loose, dry <sup>very</sup> low plasticity, 80% fine to coarse subrounded to subangular gravel, 10% sand, 20% silt
	SM		Silty Sand (SM), very dark gray <sup>ish</sup> brown (2.57 <sup>3</sup> / <sub>2</sub> ), loose, dry to moist, 70-80% fine to coarse subangular to subrounded sand, 20-30% silt, micaceous, trace shell fragments and wood debris
			<p>BLE = 0 white drillery                      open borehole to 10.0' reads +100% LEL, <del>Agua</del>  <del>was added to borehole before building the well</del>                      PID reads 0 on open hole to 0'.                      Dry <sup>was</sup> <del>was</del> added to borehole before building the well.</p>
10.0			
15.0			



PROJECT Hunter's Point  
 PROJECT NO. CI-117.03

LOCATION Hunter Point BORING DEPTH 10.0 BORING NO. EX5  
 SURFACE ELEVATION NA DATE 8/9/2002 SHEET 1 OF 1  
 DRILLING METHOD 8'HSA LOGGED BY Bob Nelson  
 SAMPLING METHOD \_\_\_\_\_ EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0	<del>XXXX</del>		Asphalt
	GM		Silty Gravel with Sand (GM), very dark grayish brown (10YR 2/2), medium dense, dry to moist, 50% fine to coarse subangular gravel, 25% medium sand, 25% silt, low plasticity
5.0	SM		Silty Sand (SM), very dark grayish brown (2.5Y 2/2), loose, dry to moist, 80% fine to coarse subangular to subrounded sand, 20% silt, micaceous, trace shell fragments and wood debris
10.0			CUM reads 0 on open borehole to 10' Gostek reads 65% LR on open borehole to 10' Gostek & CUM read zero while drilling. Dry ice was added to the borehole before building the well
15.0			



PROJECT Hunter Point  
 PROJECT NO. 01-117.03

LOCATION UCSF nearby Hunter Point BORING DEPTH \_\_\_\_\_ BORING NO. EX-6  
 SURFACE ELEVATION NA DATE 8/9/2002 SHEET 1 OF 1  
 DRILLING METHOD HSA LOGGED BY Rob Nelson  
 SAMPLING METHOD \_\_\_\_\_ EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0		<del>Asphalt</del>	
		Basalt	
			Silty sand & pealy graded sand with silt (cont) (5m) very dark grayed brown (2.5 Y <sub>7.5</sub> ), loose, dry to moist, 85-90% fine to coarse subrounded sand, 10-15% silt, occasional, trace of shell fragments and debris, Fill
5.0			LEL = 8% white drilling LEL = +100% in bucket after removing auger OUM = 0-2 ppm; no odor on open bucket to 10'
10.0			dry ice was added to the open bucket before building the well.
15.0			



PROJECT Hunter Point Landfill  
 PROJECT NO. 01-117.03

LOCATION Hunter Point BORING DEPTH 11.0 BORING NO. EX-7  
 SURFACE ELEVATION NA DATE 9/9/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" HSA LOGGED BY Rob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0 1.0 2.0 3.0 4.0 5.0	SM/SC		<p>Silty Gravel with Sand to Clay, gravel with sand (SM/SC) brown (10YR<sub>2</sub>), dense, dry to moist, low plasticity, 70% fine to coarse gravel, 15% sand, 15% silt: NO odor, FILL                      OUM &amp; Gas test = zero while drilling</p>
10.0 11.0 12.0 13.0 14.0 15.0	SM/SP		<p>Silty Sand to Poorly graded Sand with Silt (SM/SP), very dark grayish brown (2.5Y<sub>2</sub>), loose, dry to moist, 80% fine to coarse subrounded sand, 20% silt, micaceous, trace of shell fragments, FILL                      OUM = 3%, Gas test = 0-1% while drilling at borehole ground level                      Gas test reads +100% LEL on open borehole, methane meter read 4.8% CH<sub>4</sub> (maximum reading of 10%)                      dry ice added to borehole to lower LEL &amp; O<sub>2</sub> concentrations prior to constructing well.</p>



PROJECT Hunter Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point BORING DEPTH 10.0 BORING NO. EX-3  
 SURFACE ELEVATION NA DATE 9/12/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" ASA LOGGED BY Bob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0		<del>asphalt</del>	
	H		<p>Gravelly lean Clay with Sand (GL), brown (10YR<sup>4</sup>/<sub>3</sub>)          stiff, dry to moist, 50% lean clay, 30% fine          subangular gravel, 20% fine to medium sand,          no silt, 0.0% bentonite and zero white          drilling</p>
5.0			<p>Bastek used 17 1/2 LEL on open hole to 10.0'          Dry ice was added to the hole prior to installing          the well.</p>
10.0	//////		
15.0			



PROJECT Hunter Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point BORING DEPTH 10.0' BORING NO. FX-~~89~~ 9  
 SURFACE ELEVATION NA DATE 8/12/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" HSA LOGGED BY Rob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0			<del>asphalt</del> asphalt
4			FILL: Gravelly lean clay with sand (GL), brown (10YR4/2) medium stiff, dry to moist, 50% lean clay, 35% fine subangular gravel, 15% fine sand, no silt, OVM & Chy meter reads zero
10			lean clay (LL), dark bluish gray (5Y4/2), soft, moist, BSZ lean clay, 15% very fine sand, traces of shell fragments, faint H <sub>2</sub> S odor OVM & bootack read zero during drilling, open bucket reads zero on OVM & gate
15.0			



PROJECT Hunter Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point BORING DEPTH 10.0 BORING NO. EX-10  
 SURFACE ELEVATION NA DATE 8/12/2002 SHEET 1 OF 1  
 DRILLING METHOD 8" HSA LOGGED BY Rob Nelson  
 SAMPLING METHOD NA EDITED BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

DEPTH (FEET)	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0 1.0 2.0 3.0 4.0 5.0	GM		Fill. Silty Gravel with Sand (GM), dark brown LT-510YR 2/3, dense, dry, 50% coarse subangular gravel, 25% fine to medium sand, 25% silt, trace of metal debris OVM & Castek reads zero when drilling
5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0	CH	/ / /	Sandy Fat Clay (CH) dark olive gray (5Y 2/2), soft, moist (wet below 9'), highly plastic, 30% fine to medium sand, 70% clay OVM & Castek read zero when drilling. Castek reads zero LEL on open bore to R.O.



PROJECT Hunter Point  
 PROJECT NO. 01-117-03



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME 10:30  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

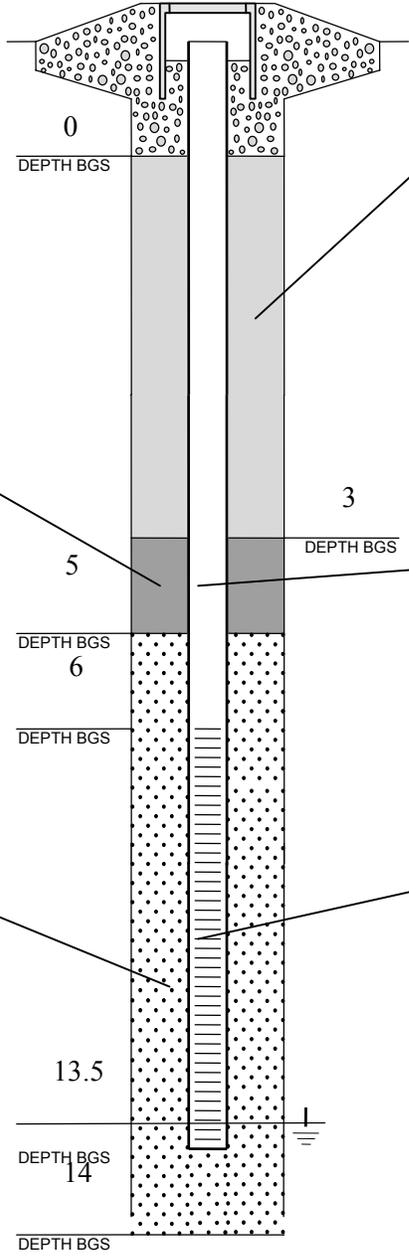
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

### FILTER PACK

AMOUNT CALCULATED Not applicable  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP01  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER 12 gallons  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 13:50  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

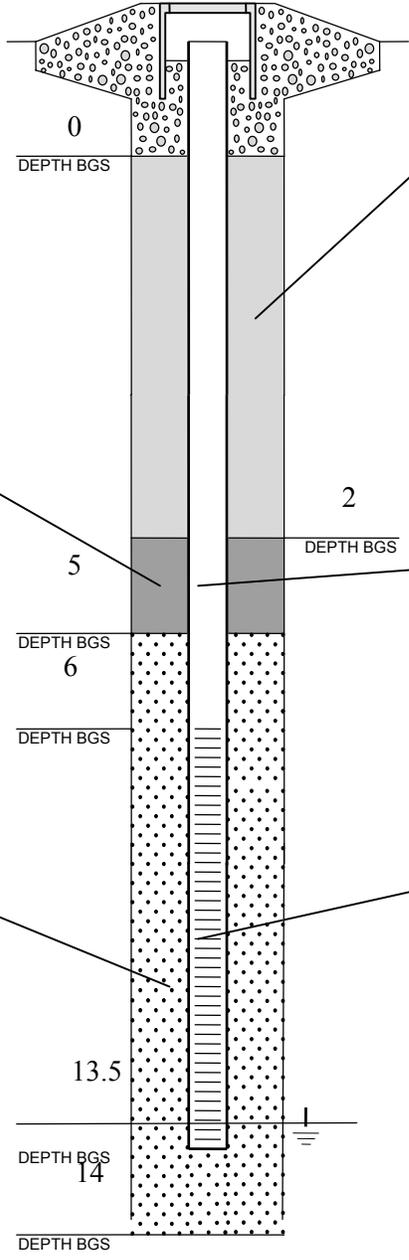
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

### FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP01A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME 11:25  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

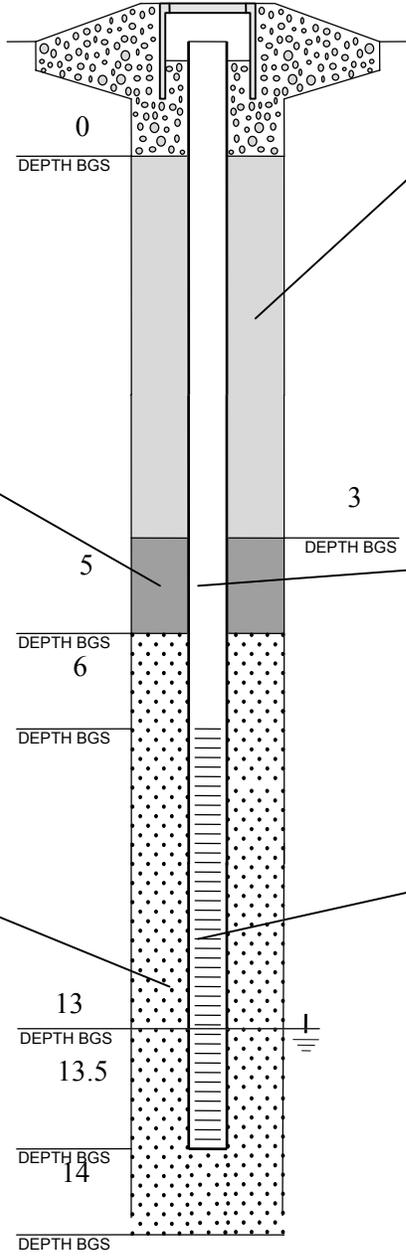
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

### FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP02  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER 12 gallons  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 15:20  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

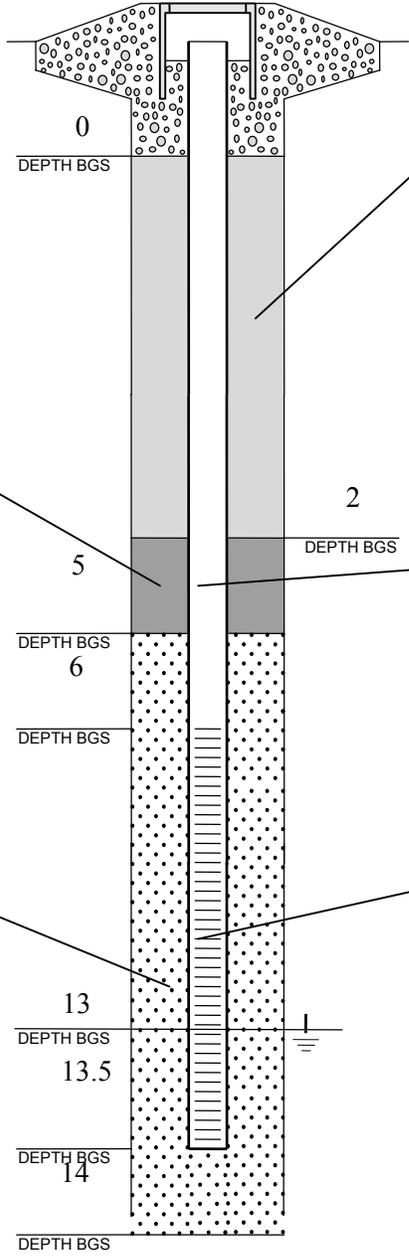
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP02A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

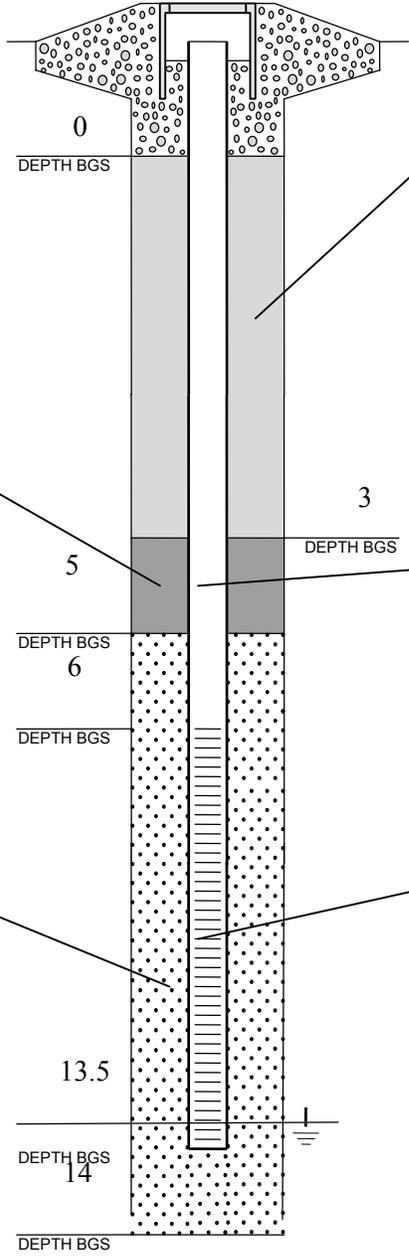
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP03  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER 12 gallons  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

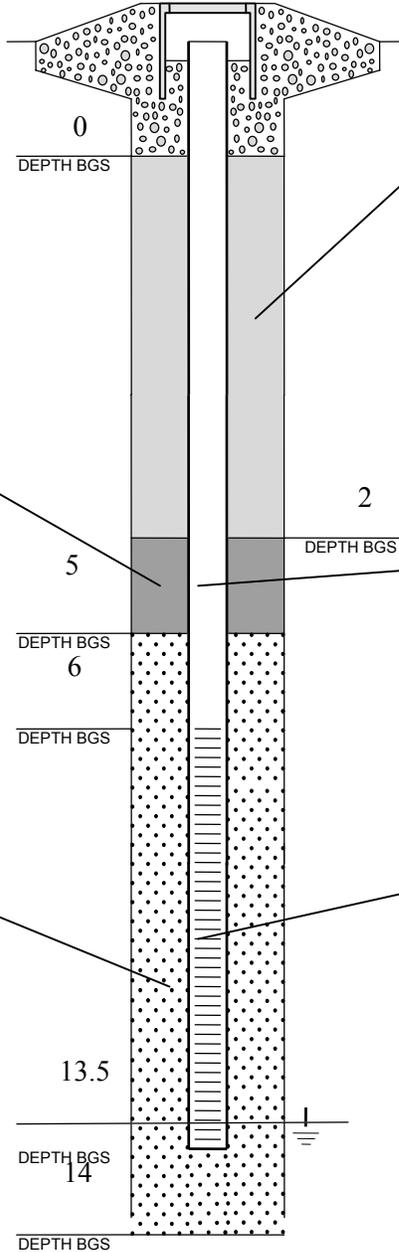
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP03A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME 13:45  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

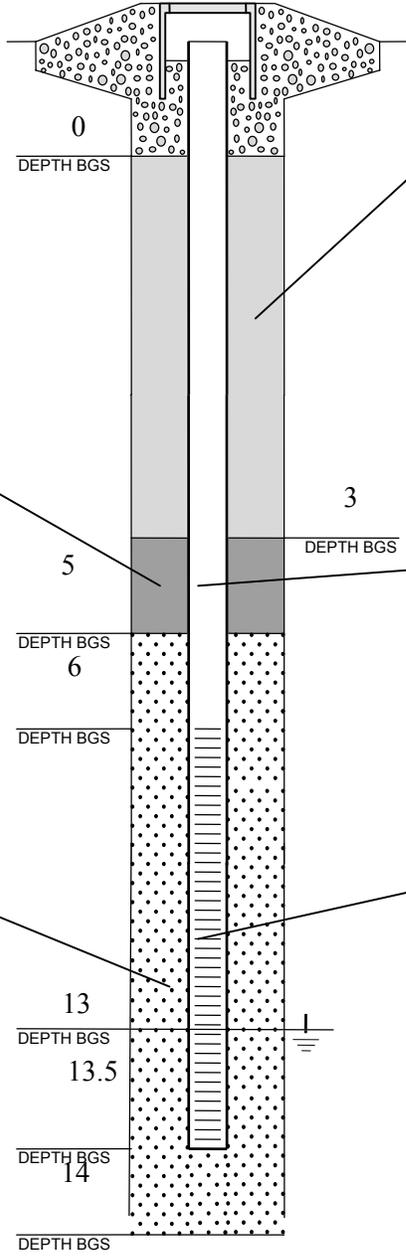
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE 0.375  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP04  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. \_\_\_\_\_  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 10:35  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

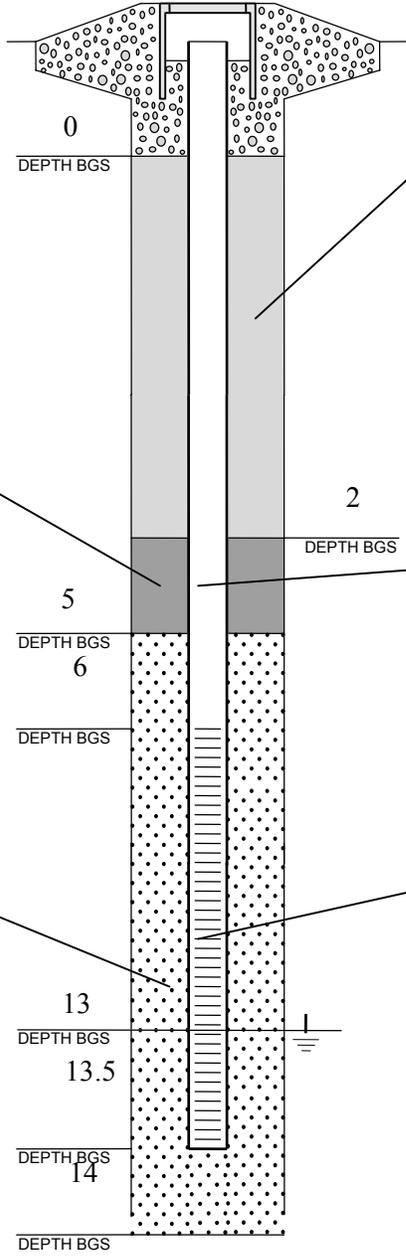
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 1  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

### FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP04A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 14:25  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

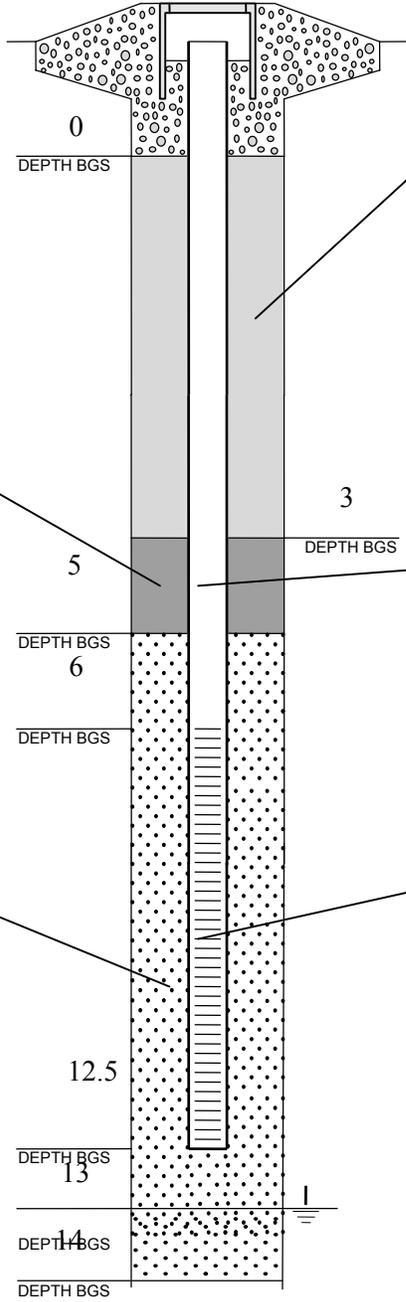
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 250 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP05  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER 12 gallons  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 11:18  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

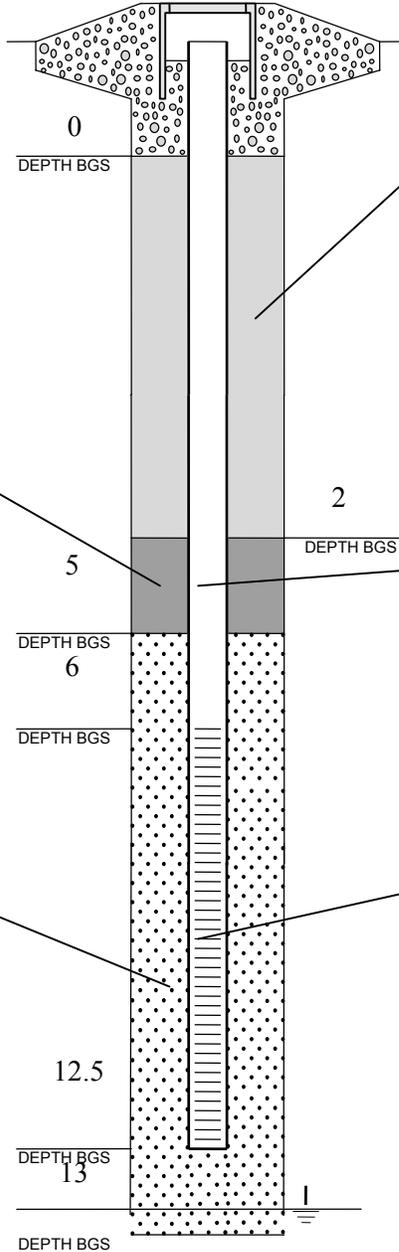
AMOUNT CALCULATED Not applicable  
 AMOUNT USED 75 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED Not applicable  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/12  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 13.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP05A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 13.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.16 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 14:25  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

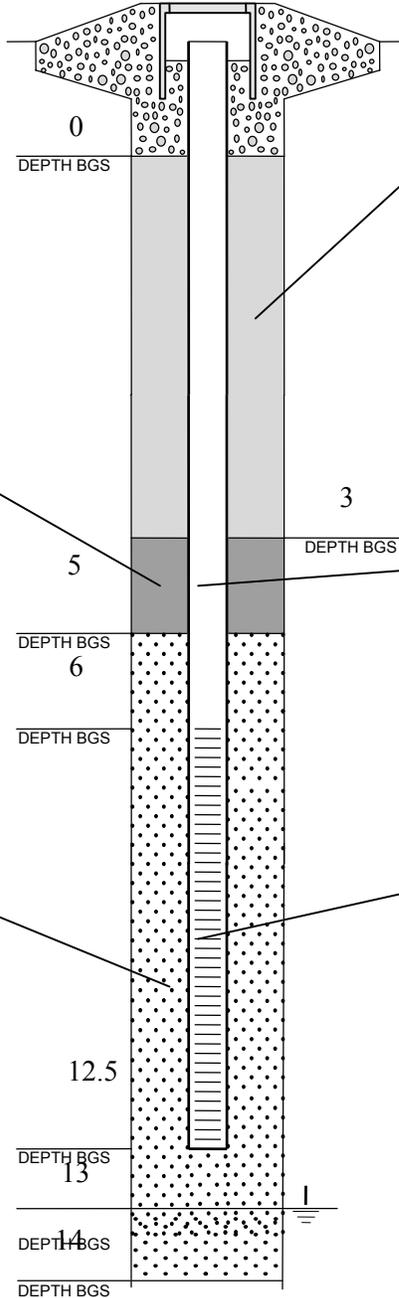
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 250 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP05B  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 pounds  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER 12 gallons  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 15:00  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

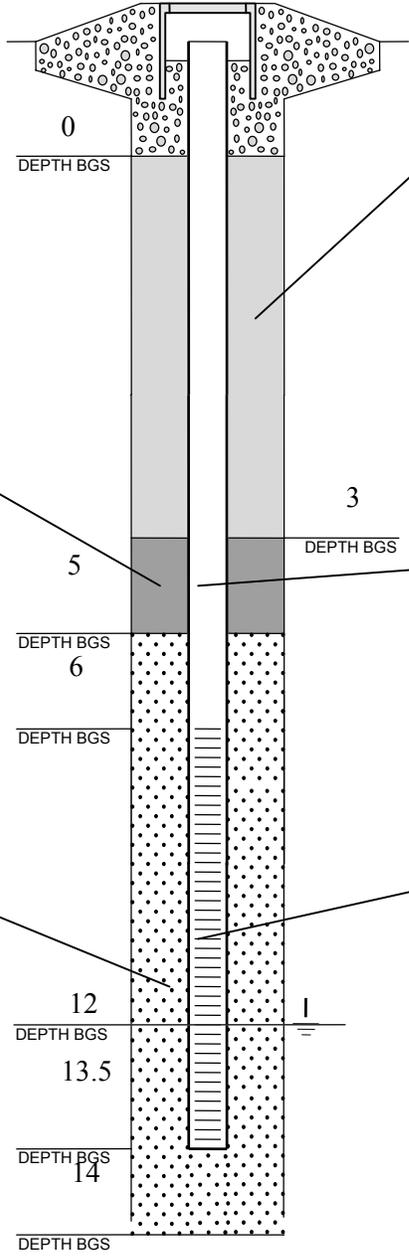
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP06  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

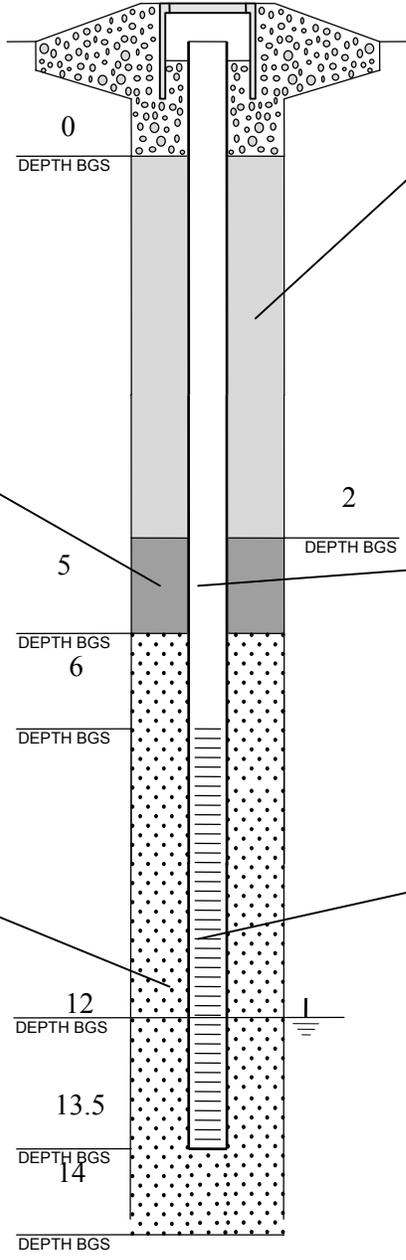
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP06A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not Applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 11-25-02 TIME \_\_\_\_\_

WELL INSTALLATION BEGAN:  
 DATE 11-25-02 TIME \_\_\_\_\_

WELL COMPLETION FINISHED:  
 DATE 11-25-02 TIME \_\_\_\_\_

DRILLING CO. GREGG Drilling

DRILLER \_\_\_\_\_

LICENSE \_\_\_\_\_

DRILL RIG \_\_\_\_\_

DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_

DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED \_\_\_\_\_

PELLETS, SIZE \_\_\_\_\_

CHIPS, SIZE medium

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

METHOD INSTALLED:  
 POURED  TREMIE

AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED 150 pounds

SAND, SIZE #2/16

FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

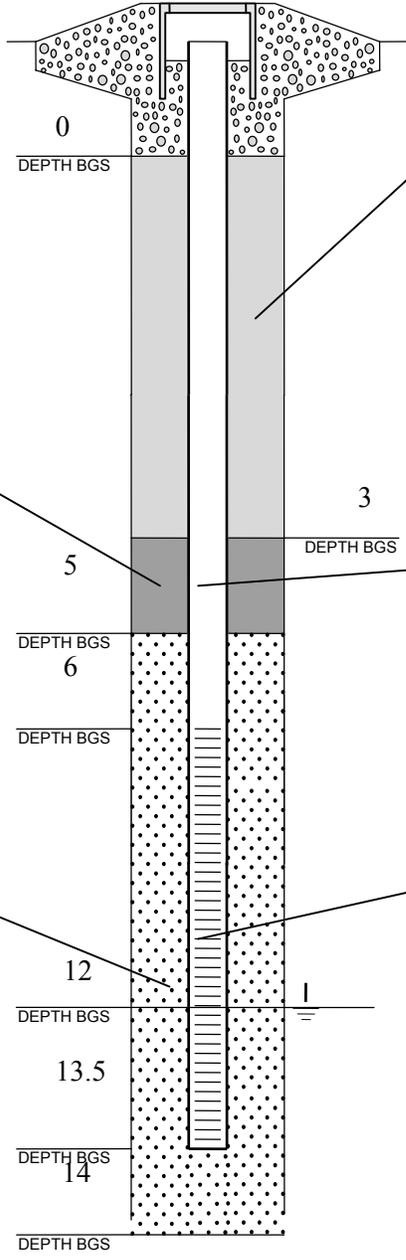
METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT

ABOVE GROUND W/BUMPER POST

CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP06B

PROJECT Parcel E Nonstd Data Gaps Inv

SITE IR-01/21

BOREHOLE NO. \_\_\_\_\_

WELL PERMIT NO. Not applicable

TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED \_\_\_\_\_

GROUT FORMULA

PORTLAND CEMENT 95%

BENTONITE 5%

WATER \_\_\_\_\_

PREPARED MIX

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_

LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_

SLOT SIZE 0.010

LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04/15/02 TIME 15:00  
 WELL INSTALLATION BEGAN:  
 DATE 04/15/02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04/15/02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

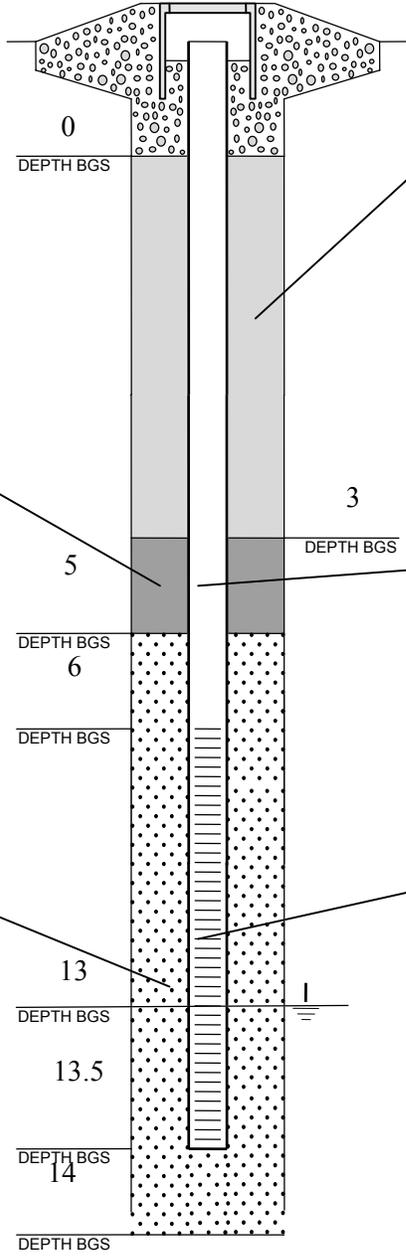
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED ? gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP07  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 13:10  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

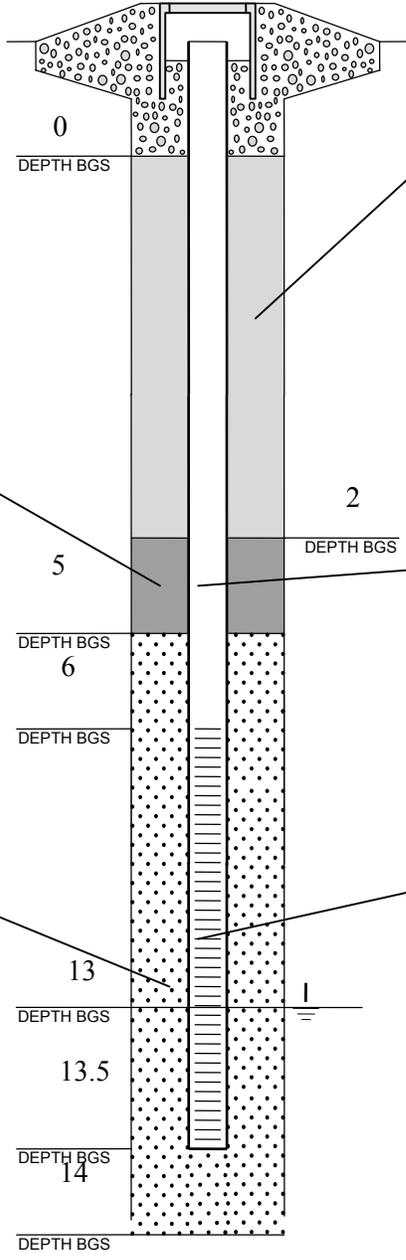
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP07A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-16-02 TIME 08:00  
 WELL INSTALLATION BEGAN:  
 DATE 04-16-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-16-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

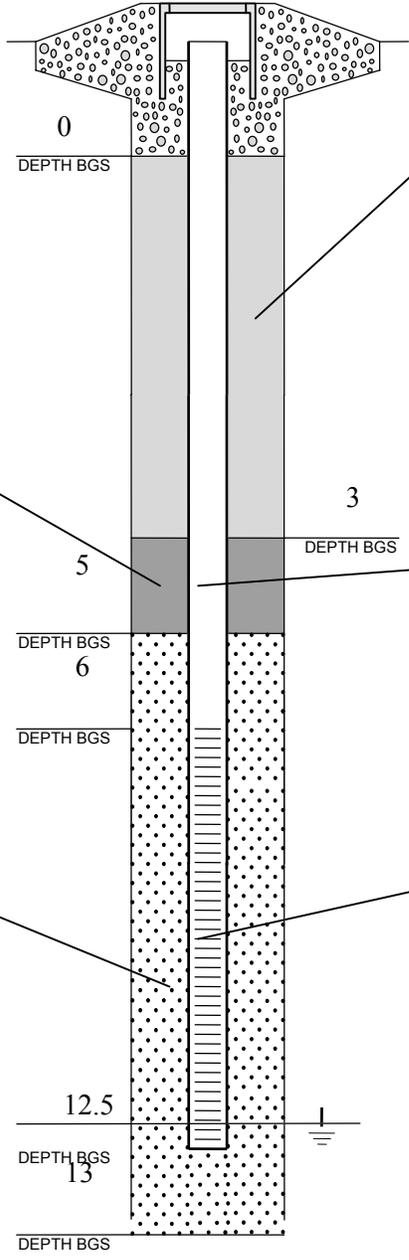
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 13.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP08  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 13.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-12-02 TIME 08:00  
 WELL INSTALLATION BEGAN:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-12-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

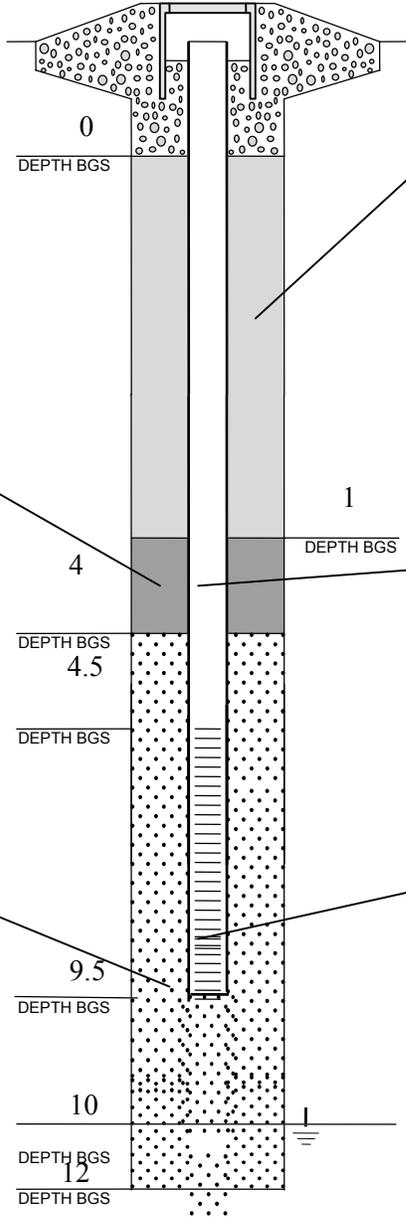
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE 0.75 inches, medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 4.0 ft bgs TO 12.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP08A  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 12.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 5.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-16-02 TIME 08:30  
 WELL INSTALLATION BEGAN:  
 DATE 04-16-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-16-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

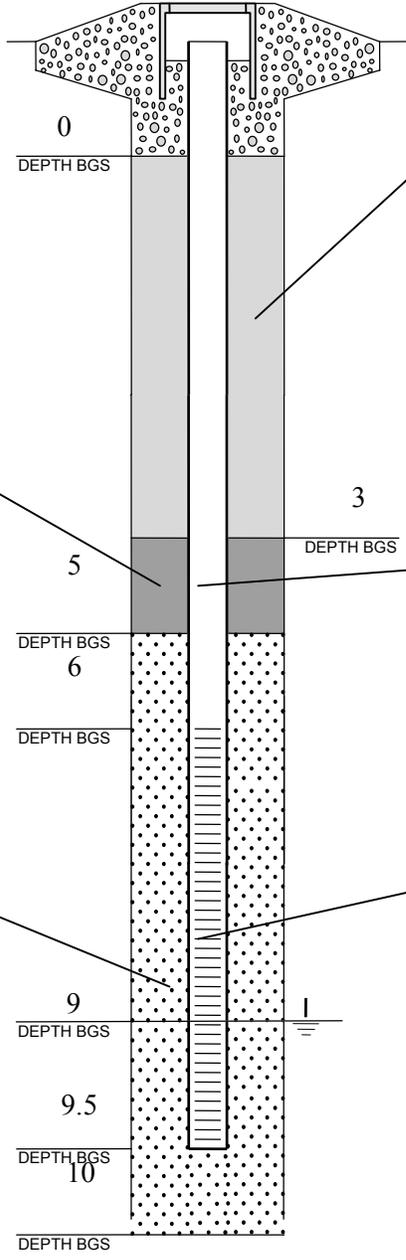
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 175 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 10 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP09  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SIT \_\_\_\_\_



## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 ROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 10.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 3.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 09:00  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

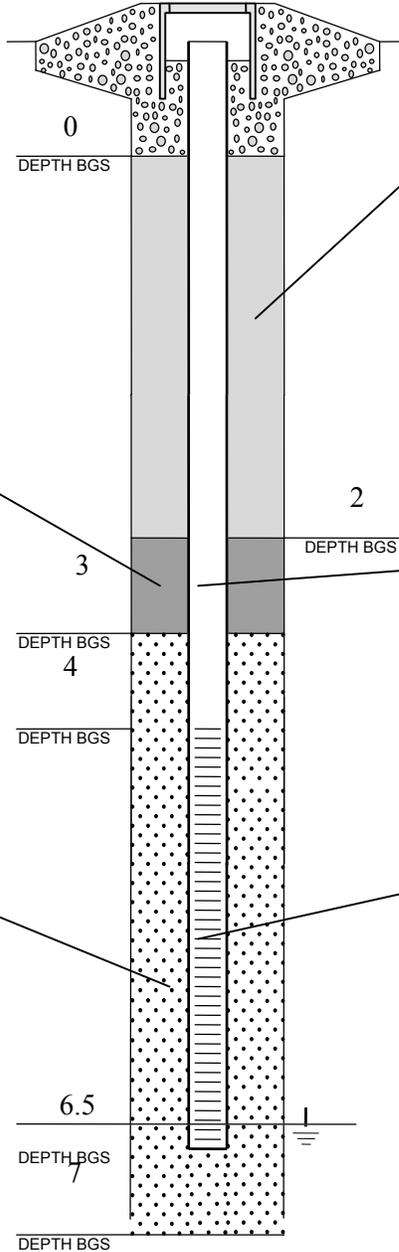
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 2.5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 75 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 3.0 ft bgs TO 7.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP10  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 7.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 2.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 09:36  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

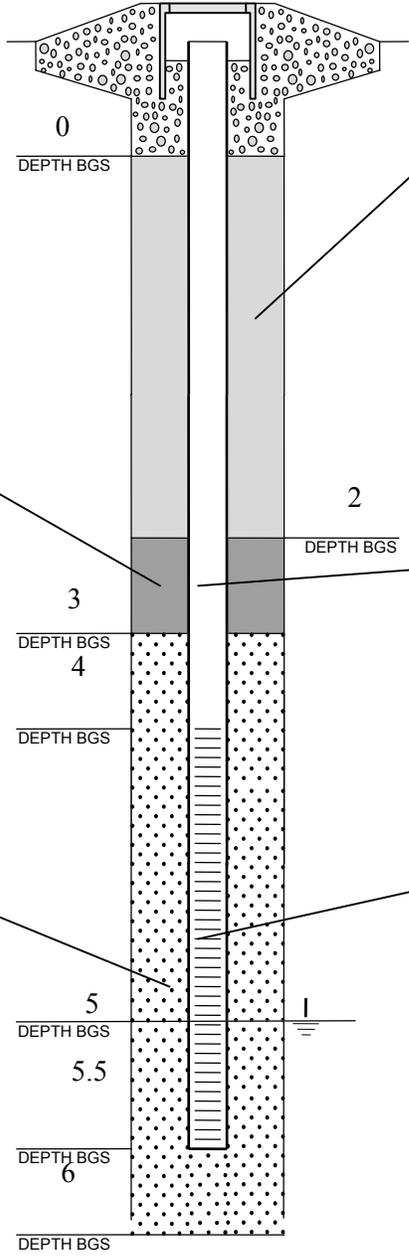
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 10 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 2.5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 75 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 3.0 ft bgs TO 6.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP11  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 6.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 1.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 11-25-02 TIME \_\_\_\_\_

WELL INSTALLATION BEGAN:  
 DATE 11-25-02 TIME \_\_\_\_\_

WELL COMPLETION FINISHED:  
 DATE 11-25-02 TIME \_\_\_\_\_

DRILLING CO. GREGG Drilling

DRILLER \_\_\_\_\_

LICENSE \_\_\_\_\_

DRILL RIG \_\_\_\_\_

DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_

DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED \_\_\_\_\_

PELLETS, SIZE \_\_\_\_\_

CHIPS, SIZE medium

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

METHOD INSTALLED:  
 POURED  TREMIE

AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED 75 pounds

SAND, SIZE #2/16

FORMATION COLLAPSE:  
 FROM 3.0 ft bgs TO 6.0 ft bgs

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

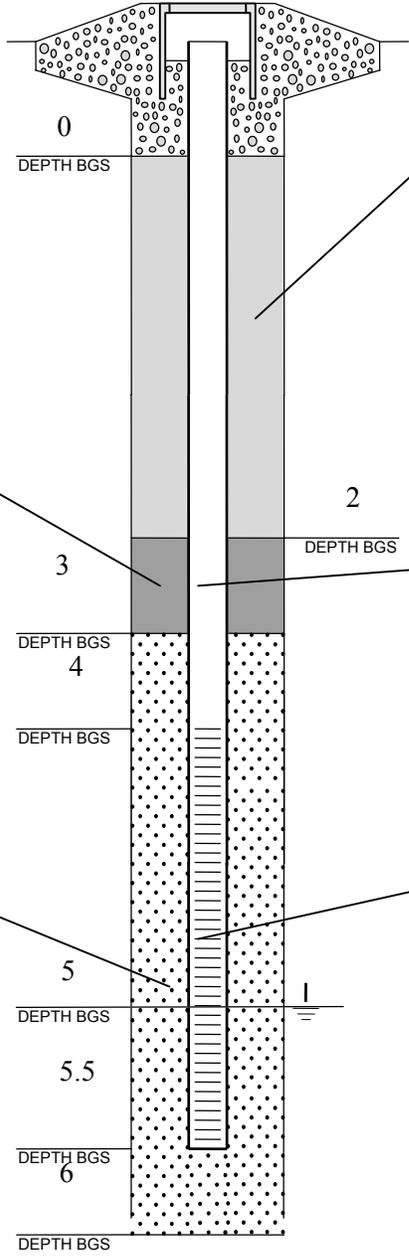
METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT

ABOVE GROUND W/BUMPER POST

CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP11A

PROJECT Parcel E Nonstd Data Gaps Inv

SITE IR-01/21

BOREHOLE NO. \_\_\_\_\_

WELL PERMIT NO. Not applicable

TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_

AMOUNT USED \_\_\_\_\_

GROUT FORMULA

PORTLAND CEMENT	<u>95%</u>
BENTONITE	<u>5%</u>
WATER	_____

PREPARED MIX

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_

LENGTH OF CASING 6.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC

\_\_\_\_\_

PRODUCT \_\_\_\_\_

MFG. BY \_\_\_\_\_

CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_

SLOT SIZE 0.010

LENGTH OF SCREEN 1.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 04-15-02 TIME 10:00  
 WELL INSTALLATION BEGAN:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 04-15-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

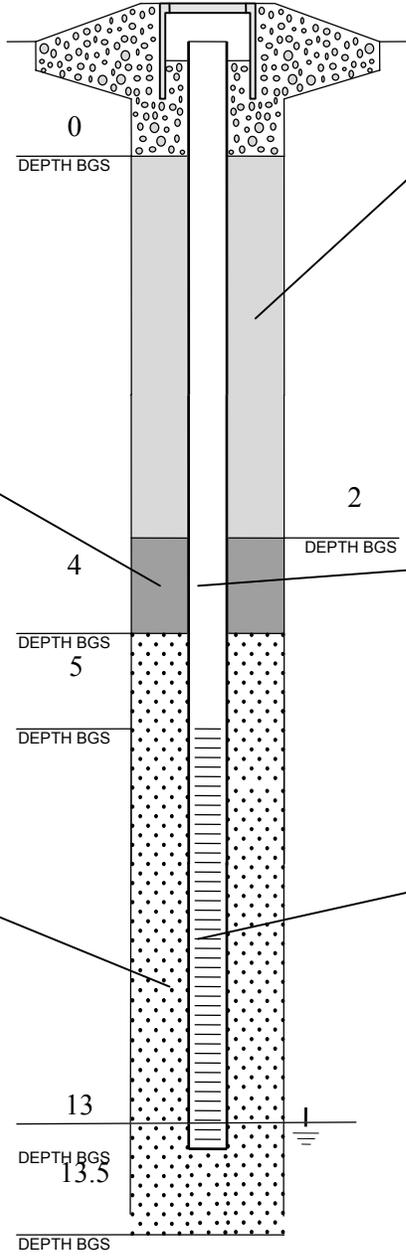
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 4.0 ft bgs TO 13.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP12  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 lbs  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 13.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 8 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 8:00  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

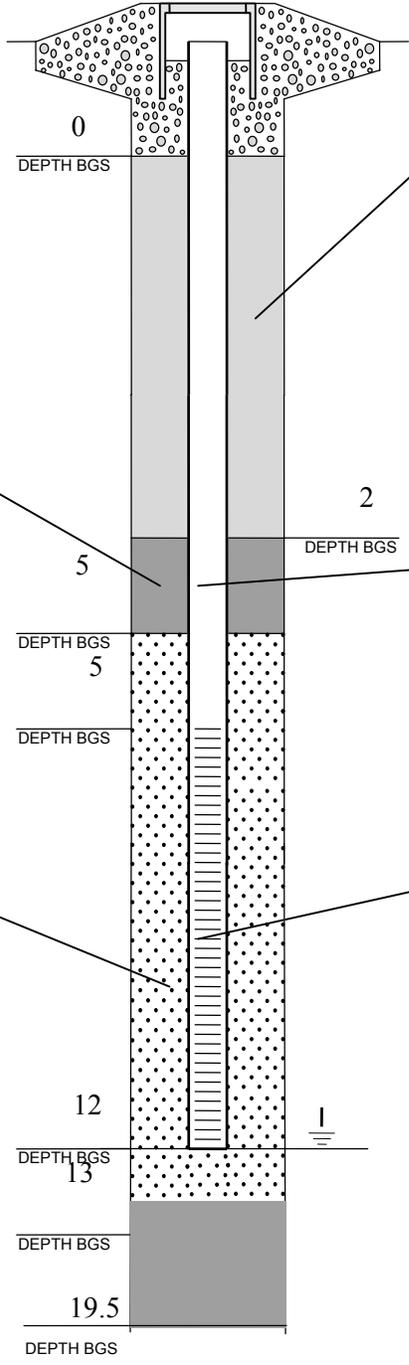
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE 0.75 inches, medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 150 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 13.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP13  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 60 lbs  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 6.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 9:12  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

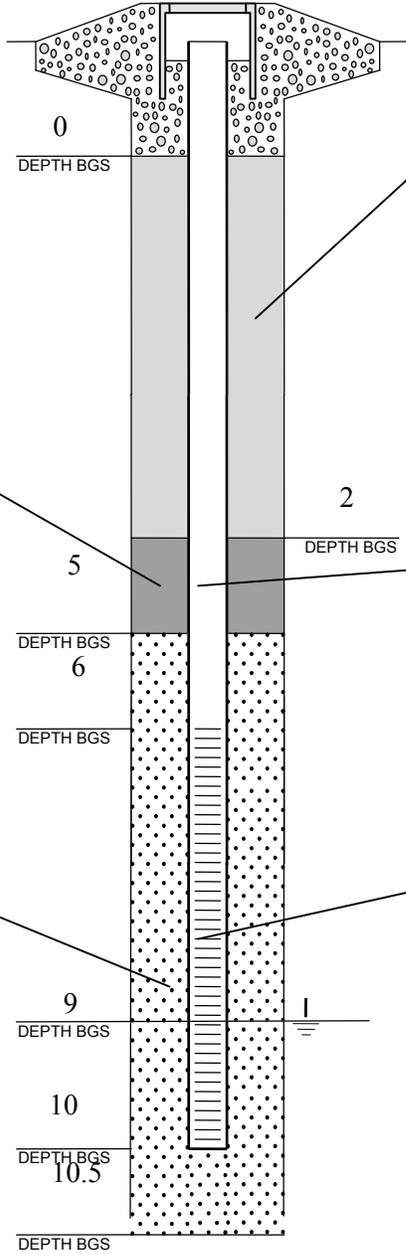
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.5 ft bgs TO 10.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP14  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 10.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 4 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 9:46  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

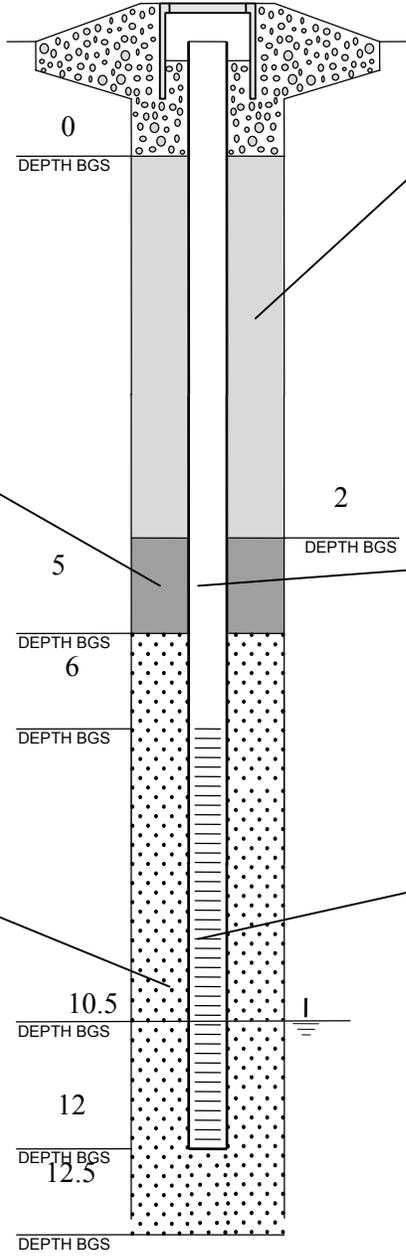
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 75 lbs  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 75 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 12.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP15  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 12.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 10:26  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

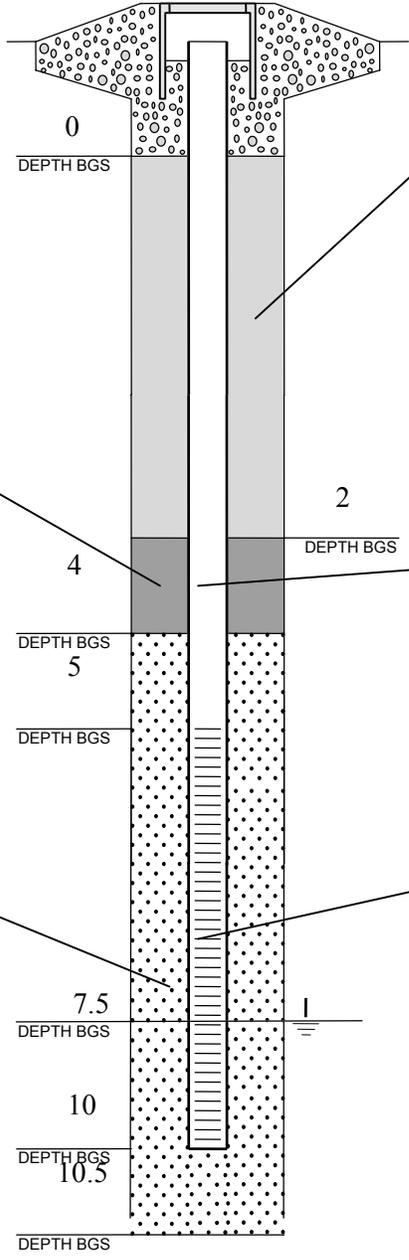
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 100 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 4.0 ft bgs TO 10.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP16  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 10.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 5.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 11:15  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

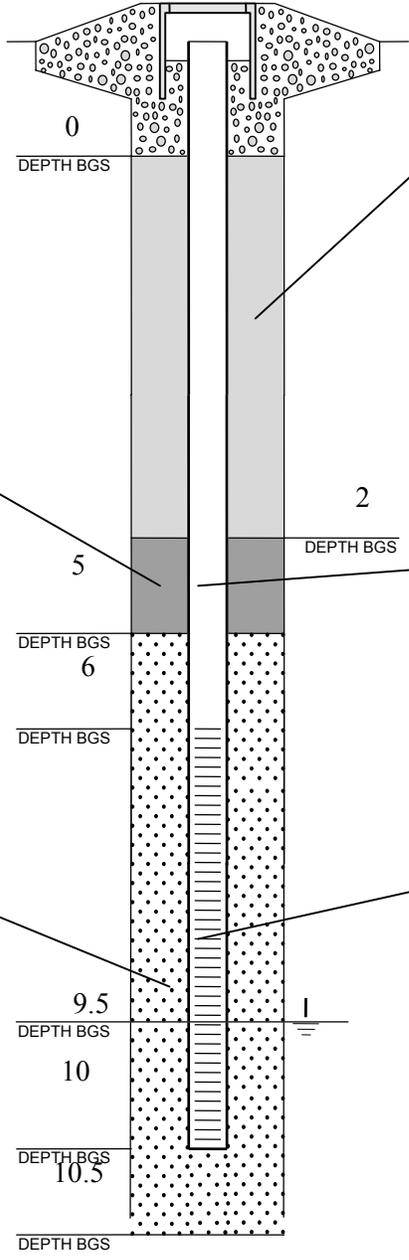
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 75 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 10.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP17  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 lbs  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 10.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 4.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 11:45  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

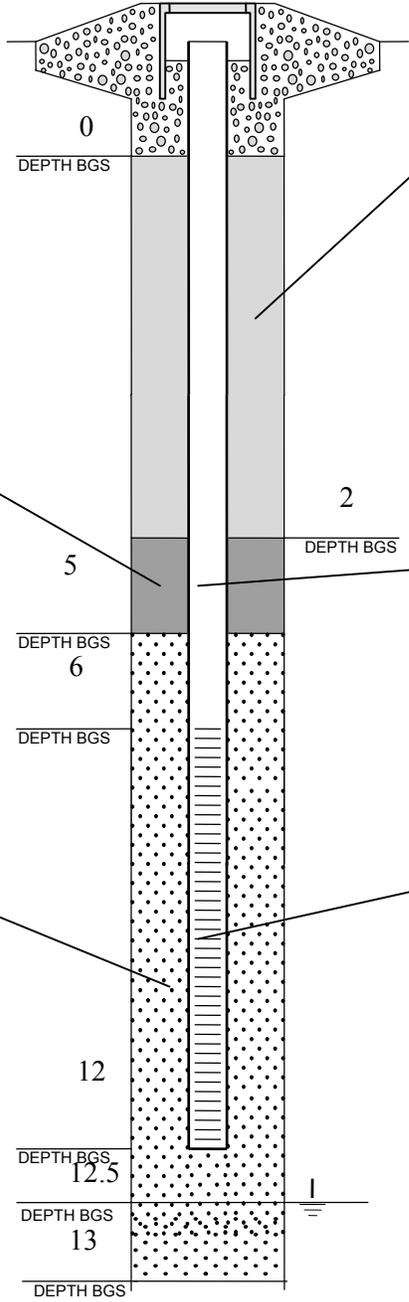
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 50 pounds  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE Not applicable  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 100 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 13.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP18  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 13.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 6.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 05-31-02 TIME 12:30  
 WELL INSTALLATION BEGAN:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 05-31-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

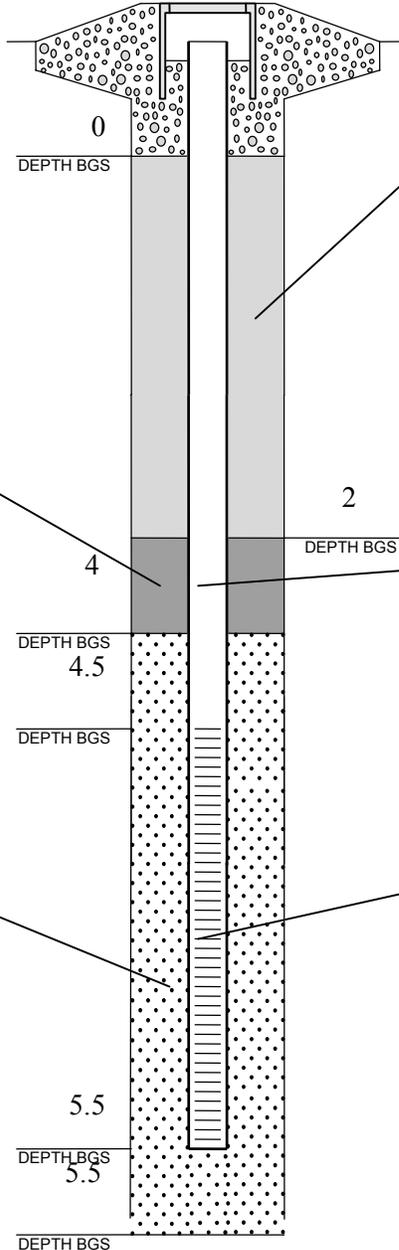
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 30 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE Not applicable  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 30 pounds  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 4.0 ft bgs TO 4.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP19  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 5.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 1 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 06-07-02 TIME 11:20  
 WELL INSTALLATION BEGAN:  
 DATE 06-07-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 06-07-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

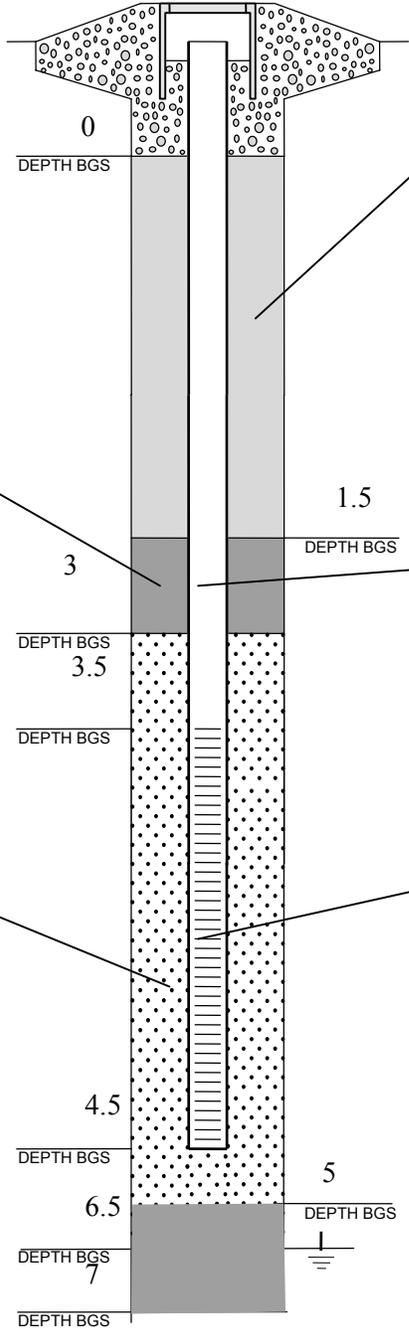
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

### FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 3.0 ft bgs TO 5.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP20  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 7.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 1.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 06-07-02 TIME 11:20  
 WELL INSTALLATION BEGAN:  
 DATE 06-07-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 06-07-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

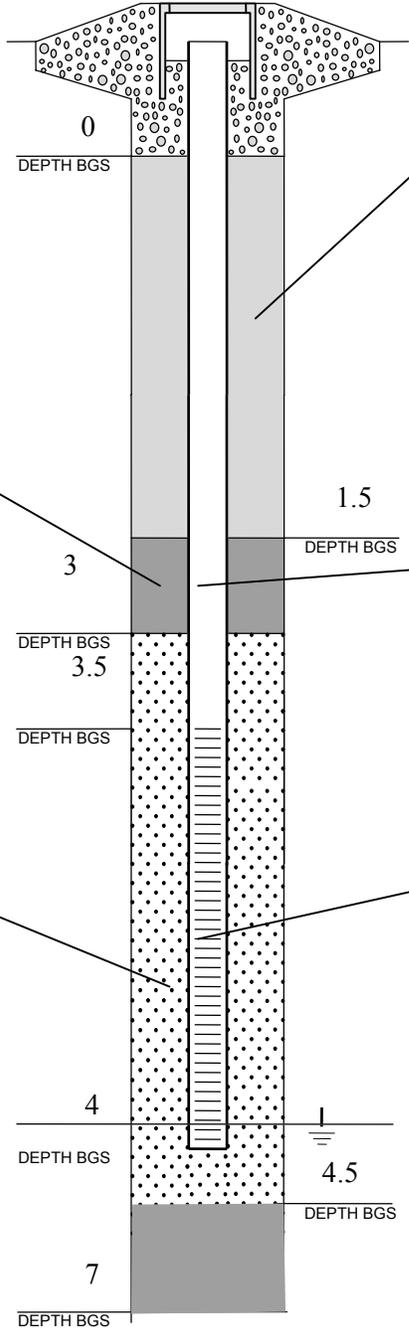
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 SAND, SIZE #2/16  
 FORMATION COLLAPSE:  
 FROM 3.0 ft bgs TO 5.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP21  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED no weight given  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 7.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 1.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-11-02 TIME 10:20  
 WELL INSTALLATION BEGAN:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

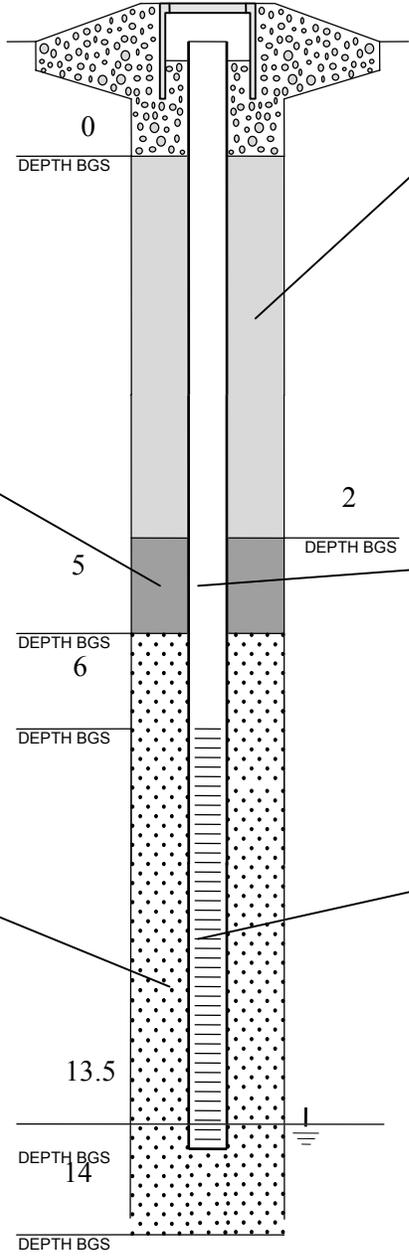
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 25 lbs.  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE \_\_\_\_\_  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 SAND, SIZE \_\_\_\_\_  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP22  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 lbs.  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-11-02 TIME 11:05  
 WELL INSTALLATION BEGAN:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

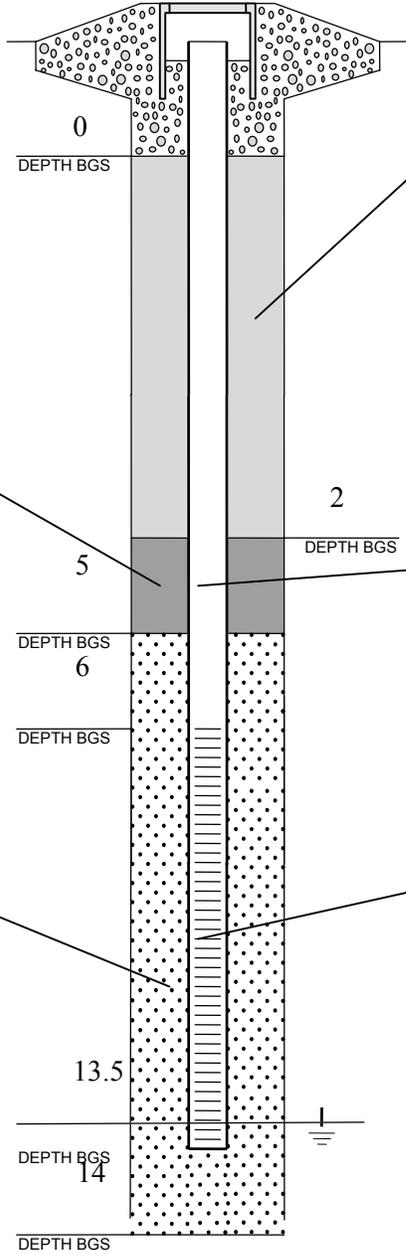
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 200 pounds  
 SAND, SIZE \_\_\_\_\_  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 14.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP23  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 lbs.  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 14.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7.5 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-11-02 TIME 12:05  
 WELL INSTALLATION BEGAN:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

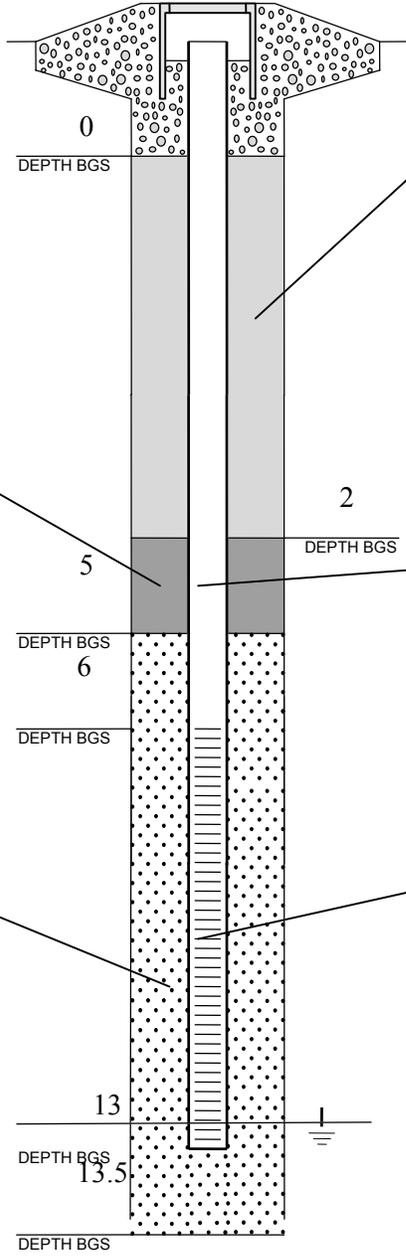
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE \_\_\_\_\_  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED \_\_\_\_\_

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 150 pounds  
 SAND, SIZE \_\_\_\_\_  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 13.5 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP24  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED Not applicable  
 AMOUNT USED \_\_\_\_\_  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 13.5 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 7 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

## DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-11-02 TIME 13:20  
 WELL INSTALLATION BEGAN:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

## BENTONITE SEAL

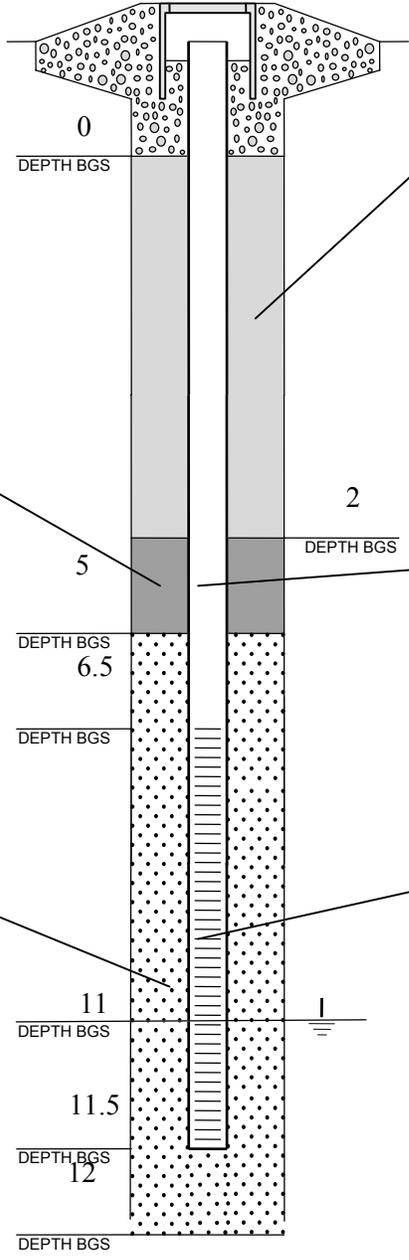
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE medium  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

## FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 SAND, SIZE \_\_\_\_\_  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 12.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



## MONITORING WELL

MONITORING WELL NO. GMP25  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

## ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 lbs.  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

## CASING

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 12.0 ft bgs

## WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 5.0 ft



TETRATECH EM INC

# GAS MONITORING PROBE COMPLETION RECORD

### DRILLING INFORMATION

DRILLING BEGAN:  
 DATE 09-11-02 TIME 14:10  
 WELL INSTALLATION BEGAN:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 WELL COMPLETION FINISHED:  
 DATE 09-11-02 TIME \_\_\_\_\_  
 DRILLING CO. GREGG Drilling  
 DRILLER \_\_\_\_\_  
 LICENSE \_\_\_\_\_  
 DRILL RIG \_\_\_\_\_  
 DRILLING METHOD:  
 HOLLOW STEM AUGER  
 AIR ROTARY  
 \_\_\_\_\_  
 DIAMETER OF AUGERS:  
 ID \_\_\_\_\_ OD 5.5 inches

### BENTONITE SEAL

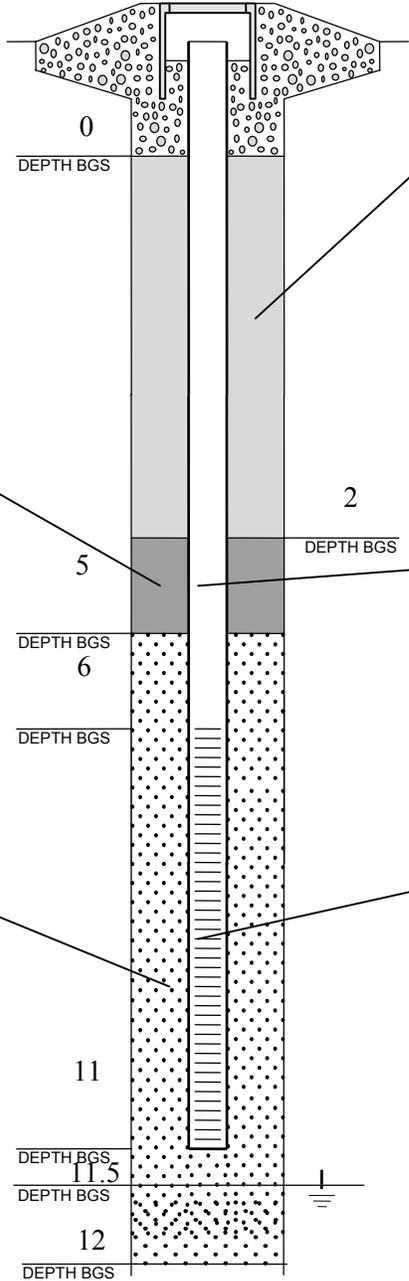
AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 PELLETS, SIZE \_\_\_\_\_  
 CHIPS, SIZE \_\_\_\_\_  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE  
 AMOUNT OF WATER USED 5 gallons

### FILTER PACK

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED \_\_\_\_\_  
 SAND, SIZE \_\_\_\_\_  
 FORMATION COLLAPSE:  
 FROM 5.0 ft bgs TO 12.0 ft bgs  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### SURFACE COMPLETION

FLUSH MOUNT  
 ABOVE GROUND W/BUMPER POST  
 CONCRETE  ASPHALT



### MONITORING WELL

MONITORING WELL NO. GMP26  
 PROJECT Parcel E Nonstd Data Gaps Inv  
 SITE IR-01/21  
 BOREHOLE NO. \_\_\_\_\_  
 WELL PERMIT NO. Not applicable  
 TOC TO BOTTOM OF WELL \_\_\_\_\_

### ANNULAR SEAL

AMOUNT CALCULATED \_\_\_\_\_  
 AMOUNT USED 160 lbs.  
 GROUT FORMULA  
 PORTLAND CEMENT 95%  
 BENTONITE 5%  
 WATER \_\_\_\_\_  
 PREPARED MIX  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 METHOD INSTALLED:  
 POURED  TREMIE

### CASING

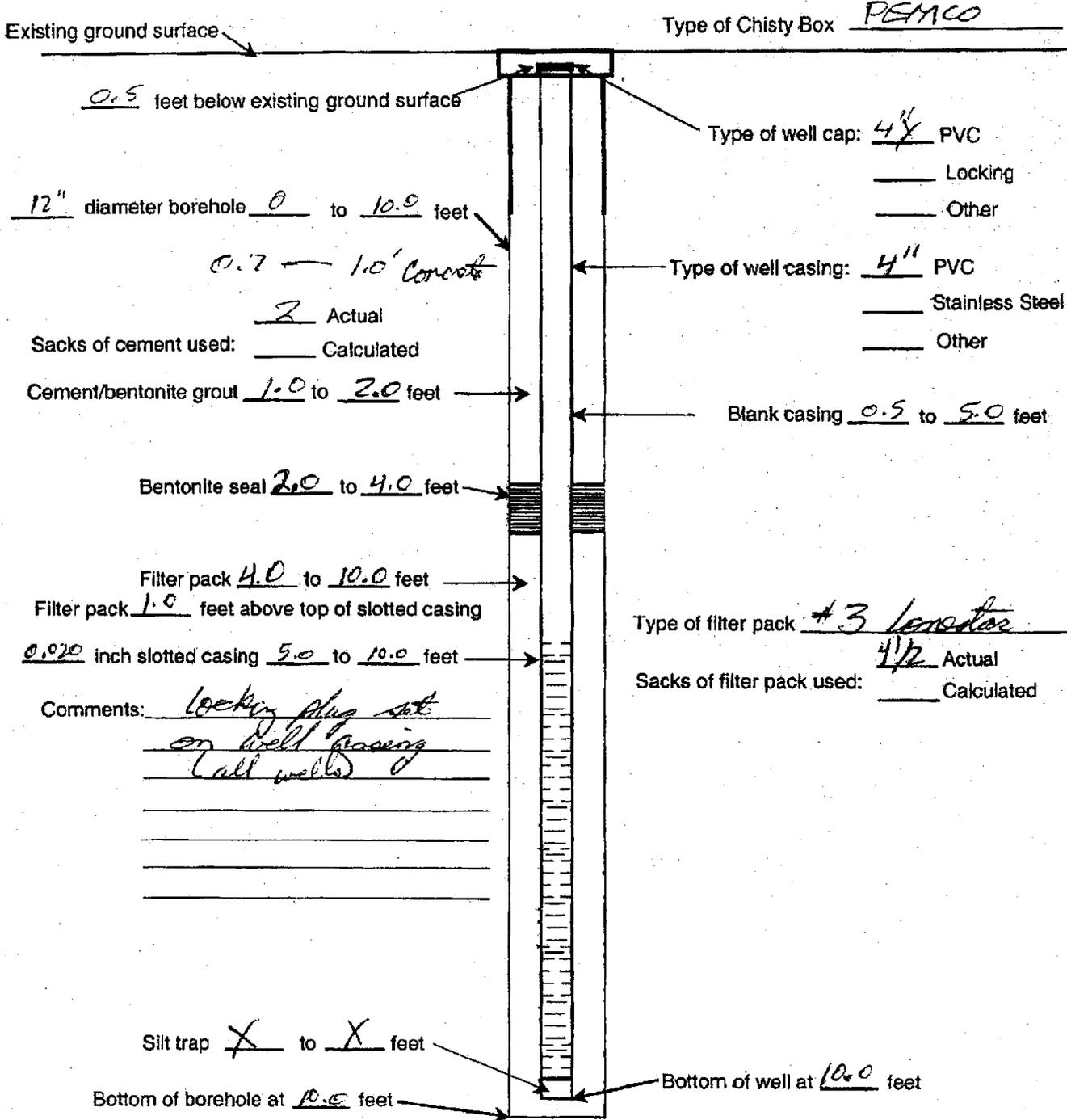
SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 LENGTH OF CASING 12.0 ft bgs

### WELL SCREEN

SCHEDULE 40 PVC  
 \_\_\_\_\_  
 PRODUCT \_\_\_\_\_  
 MFG. BY \_\_\_\_\_  
 CASING DIAMETER:  
 ID 0.75 inches OD \_\_\_\_\_  
 SLOT SIZE 0.010  
 LENGTH OF SCREEN 5.0 ft

LOCATION Hunter Point / UCSF project BORING DEPTH 10.0' BORING NO. EX-1  
 SURFACE ELEVATION NA DATE BEGAN 8/8/2002 LOGGED BY Rob Adams  
 DRILLING METHOD 12" HSA DATE FINISHED 8/8/2002

### BELOW GROUND COMPLETION



Comments: locking plug set  
on well casing  
(all wells)



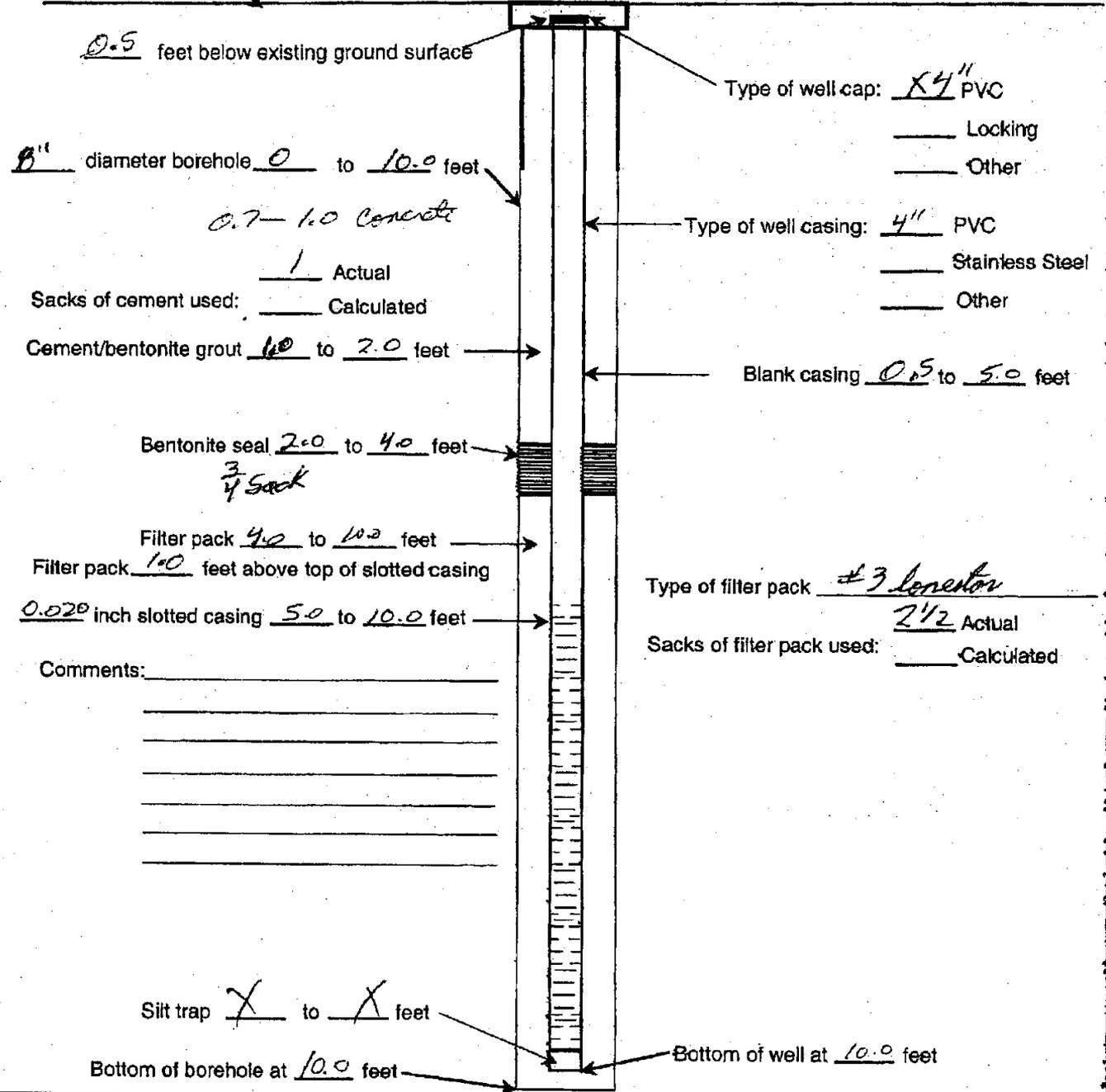
PROJECT Hunter Point / UCSF project  
 PROJECT NO. 01-117.03

LOCATION Hunter Point / UCSF facility BORING DEPTH 10.0 BORING NO. EX-2  
 SURFACE ELEVATION NA DATE BEGAN 8/8/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/8/2002

### BELOW GROUND COMPLETION

Existing ground surface

Type of Chisty Box PENCO



Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

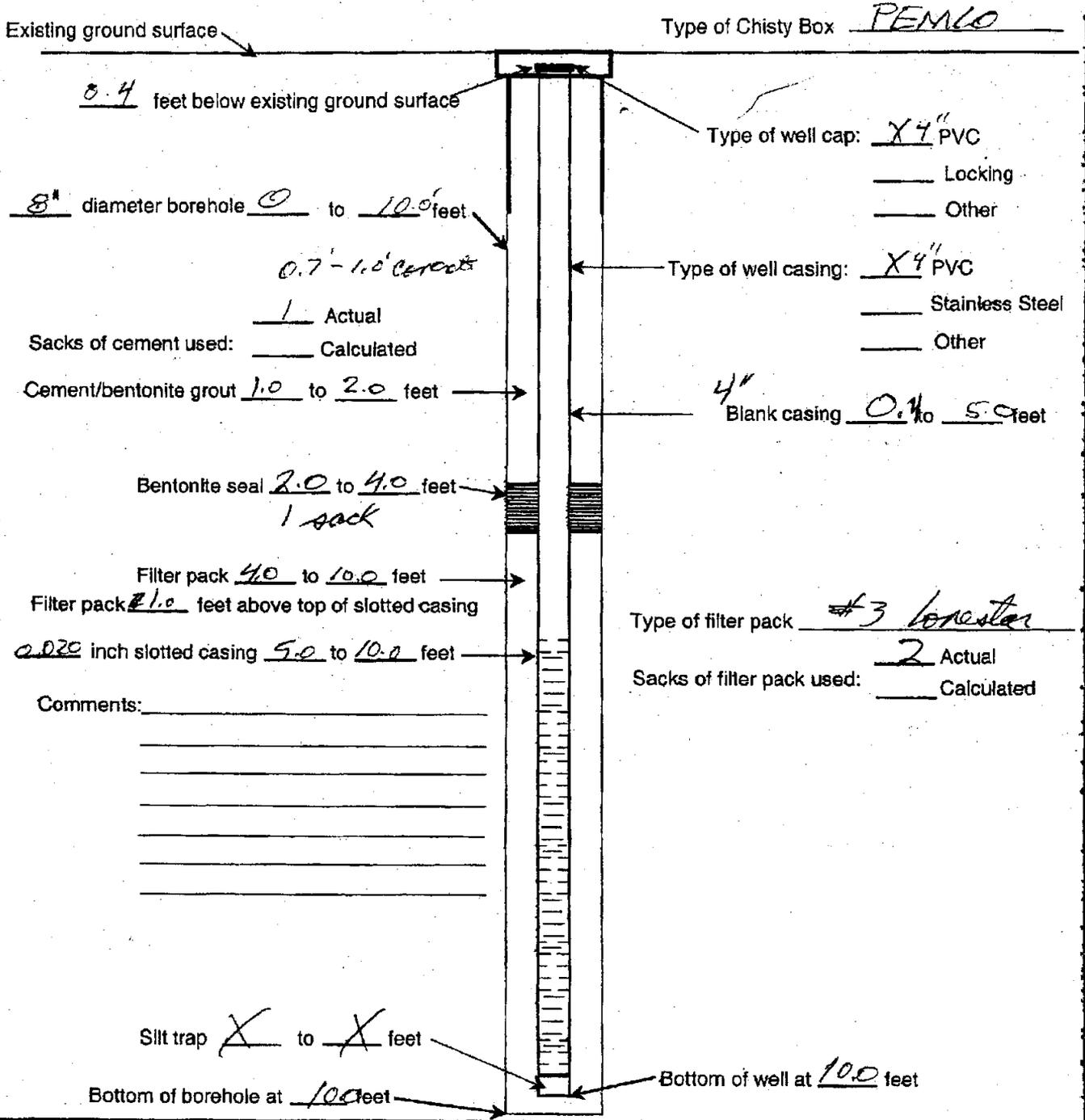


**Innovative  
 Technical  
 Solutions, Inc.**

PROJECT Hunter Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point BORING DEPTH 10.0 BORING NO. EX-3  
 SURFACE ELEVATION NA DATE BEGAN 8/8/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/8/2002

**BELOW GROUND COMPLETION**



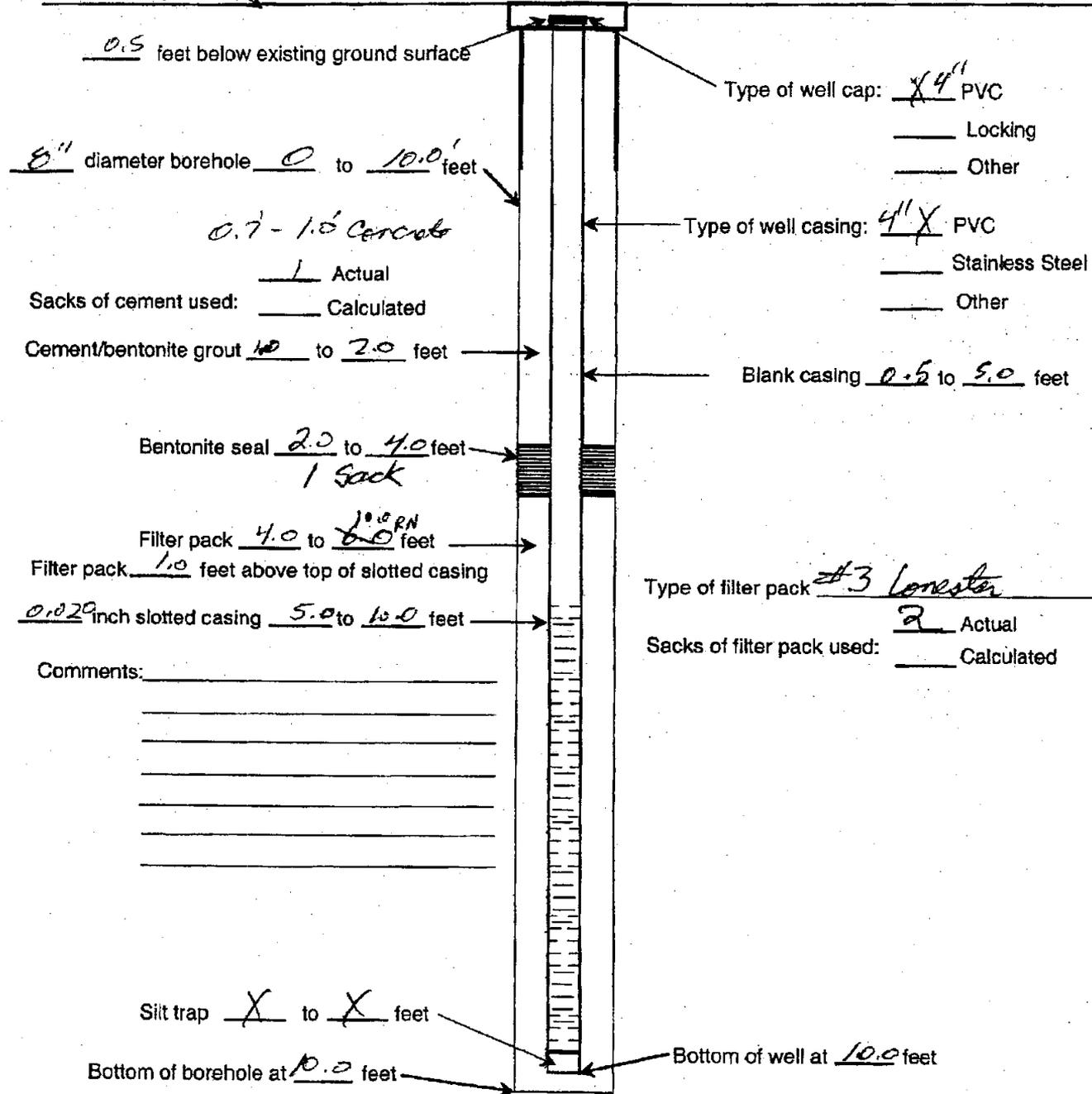
**ITSI** Innovative Technical Solutions, Inc. PROJECT \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

LOCATION Houston Point BORING DEPTH 10.0 BORING NO. EX-4  
 SURFACE ELEVATION NA DATE BEGAN 8/8/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/8/2002

**BELOW GROUND COMPLETION**

Existing ground surface →

Type of Chisty Box PEMCO



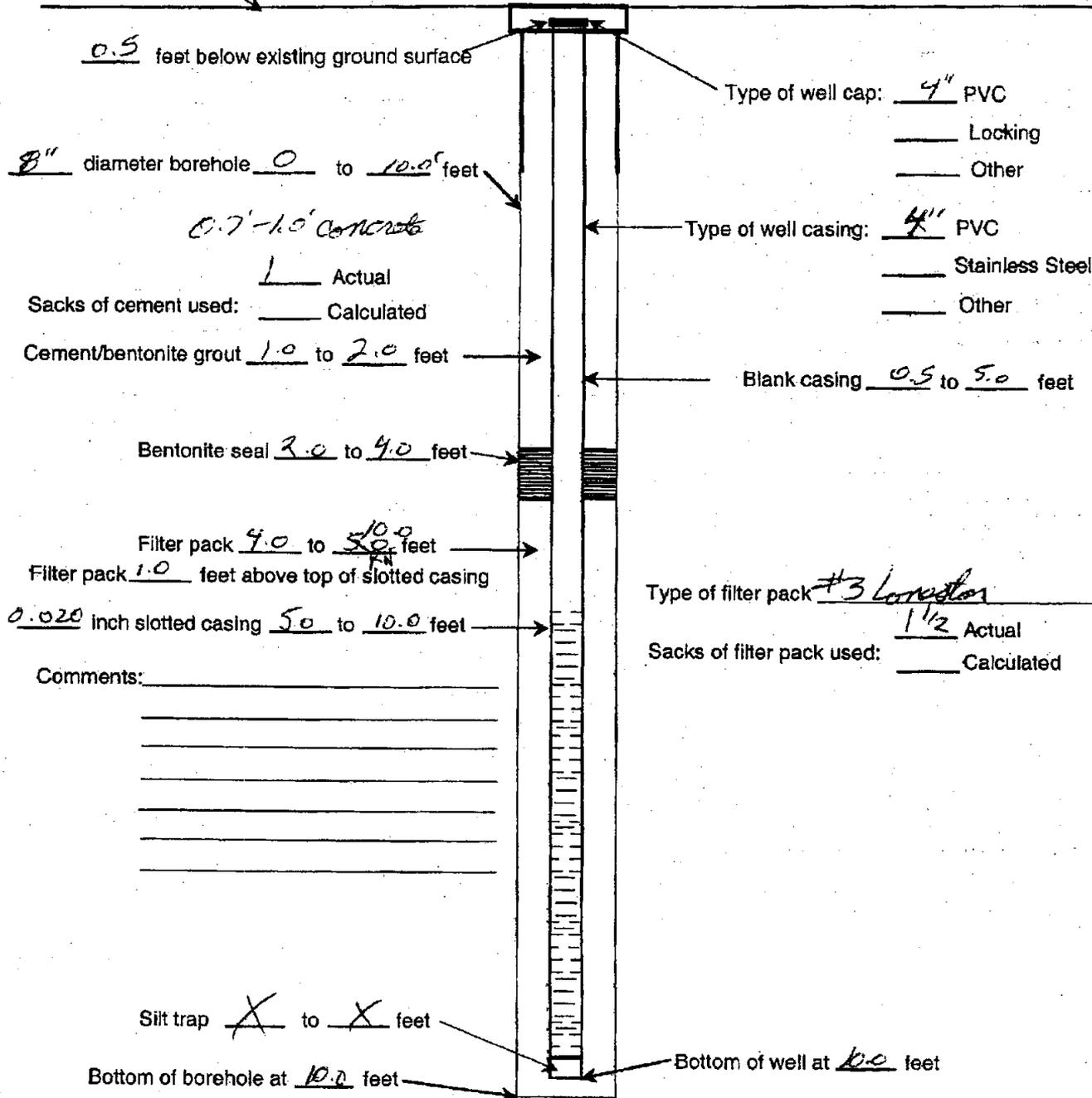
PROJECT Houston Point  
 PROJECT NO. 01-117.03

LOCATION Hunter Point / UCSF BORING DEPTH 10.0 BORING NO. EX-5  
 SURFACE ELEVATION NA DATE BEGAN 8/9/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/9/2002

### BELOW GROUND COMPLETION

Existing ground surface

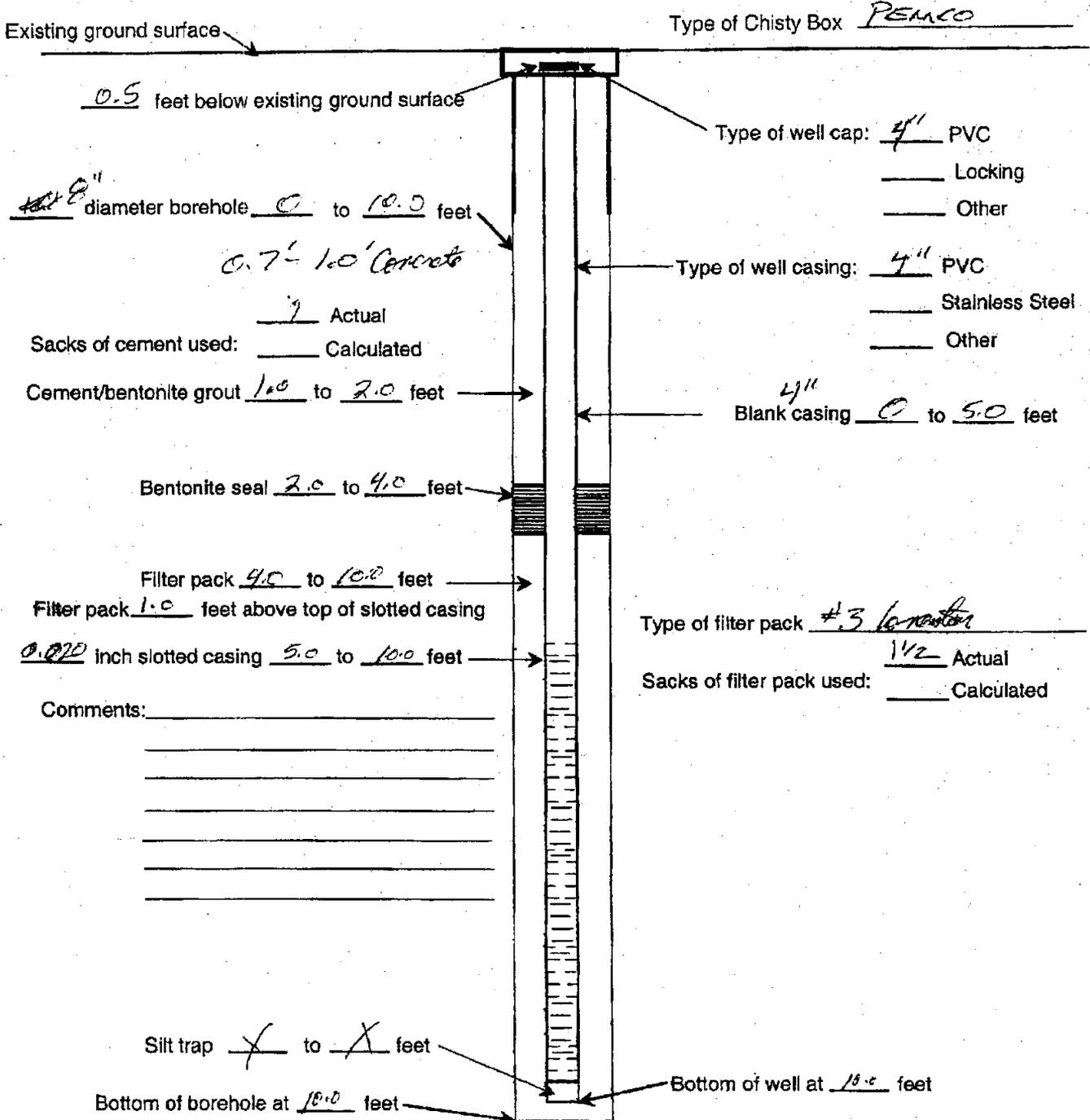
Type of Chlsty Box PERALO



PROJECT Hunter Point  
 PROJECT NO. L-17-03

LOCATION Hesters Point BORING DEPTH 10.0 BORING NO. Ex 6  
 SURFACE ELEVATION N/A DATE BEGAN 8/9/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/9/2002

### BELOW GROUND COMPLETION



Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



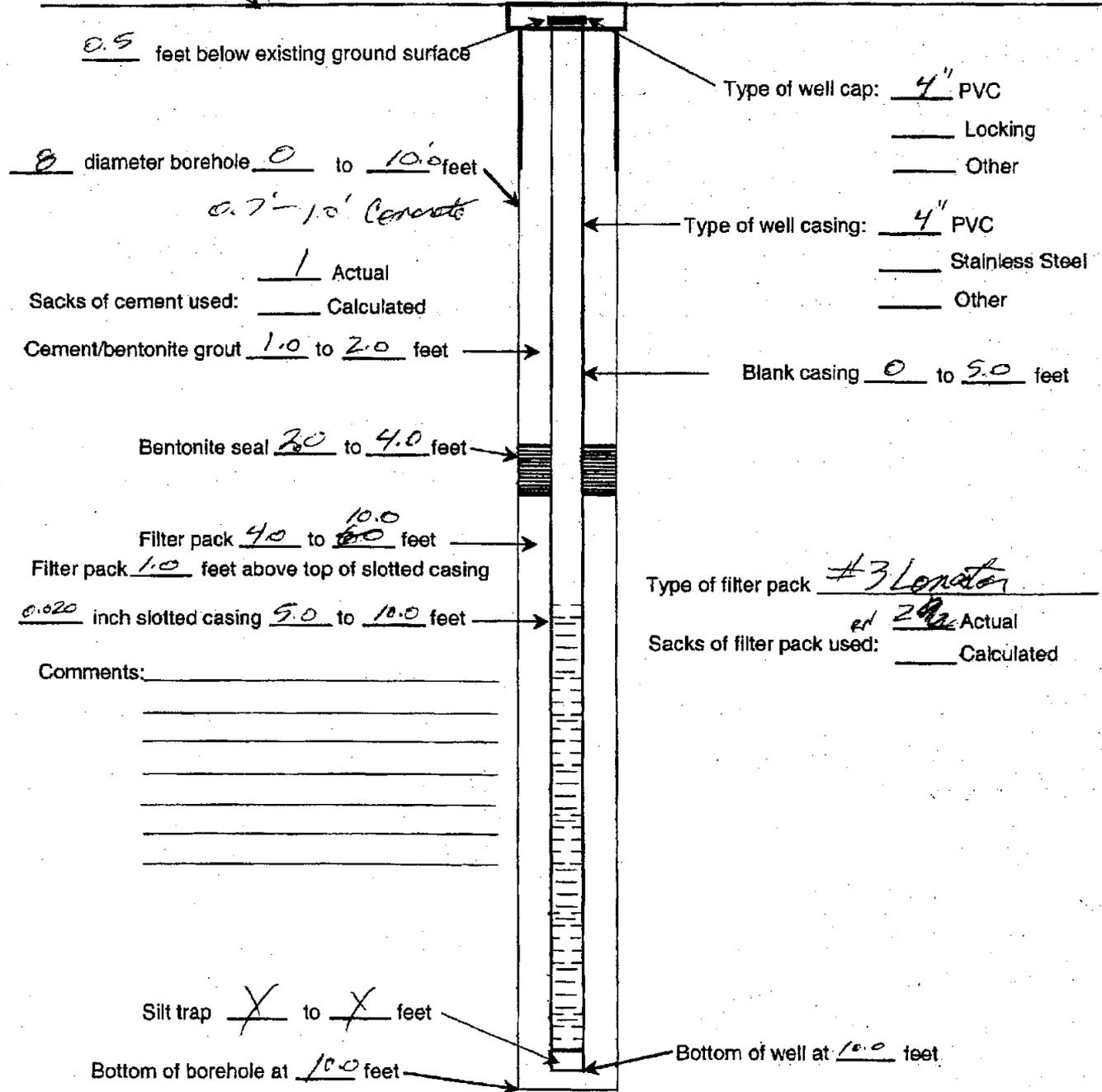
PROJECT Hesters Point  
 PROJECT NO. 01-117-03

LOCATION Hunter's Point BORING DEPTH 10.0 BORING NO. EX-7  
 SURFACE ELEVATION NA DATE BEGAN 8/9/2002 LOGGED BY Bob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/9/2002

### BELOW GROUND COMPLETION

Existing ground surface

Type of Chisty Box PENCO



PROJECT Hunter's Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point

BORING DEPTH 10.0

BORING NO. EX-8

SURFACE ELEVATION NA

DATE BEGAN 8/12/2002

LOGGED BY Rob Nelson

DRILLING METHOD E' HSA

DATE FINISHED 8/12/2002

**BELOW GROUND COMPLETION**

Existing ground surface

Type of Chisty Box PENCO

0.5 feet below existing ground surface

Type of well cap: 4" PVC

Locking

Other

10' diameter borehole 0 to 10.0' feet

Type of well casing: 4" PVC

Stainless Steel

Other

0.8-1.0' concrete

1/2 Actual

Sacks of cement used:  Calculated

Cement/bentonite grout 1.0 to 2.0 feet

Blank casing 0.5 to 5.0 feet

Bentonite seal 2.0 to 4.0 feet

Filter pack 4.0 to 4.10.0 feet

Filter pack 1.0 feet above top of slotted casing

Type of filter pack #3 limestone

0.020 inch slotted casing 5.0 to 10.0 feet

Sacks of filter pack used: 1 1/2 Actual

Calculated

Comments:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Silt trap X to X feet

Bottom of borehole at 10.0 feet

Bottom of well at 10.0 feet



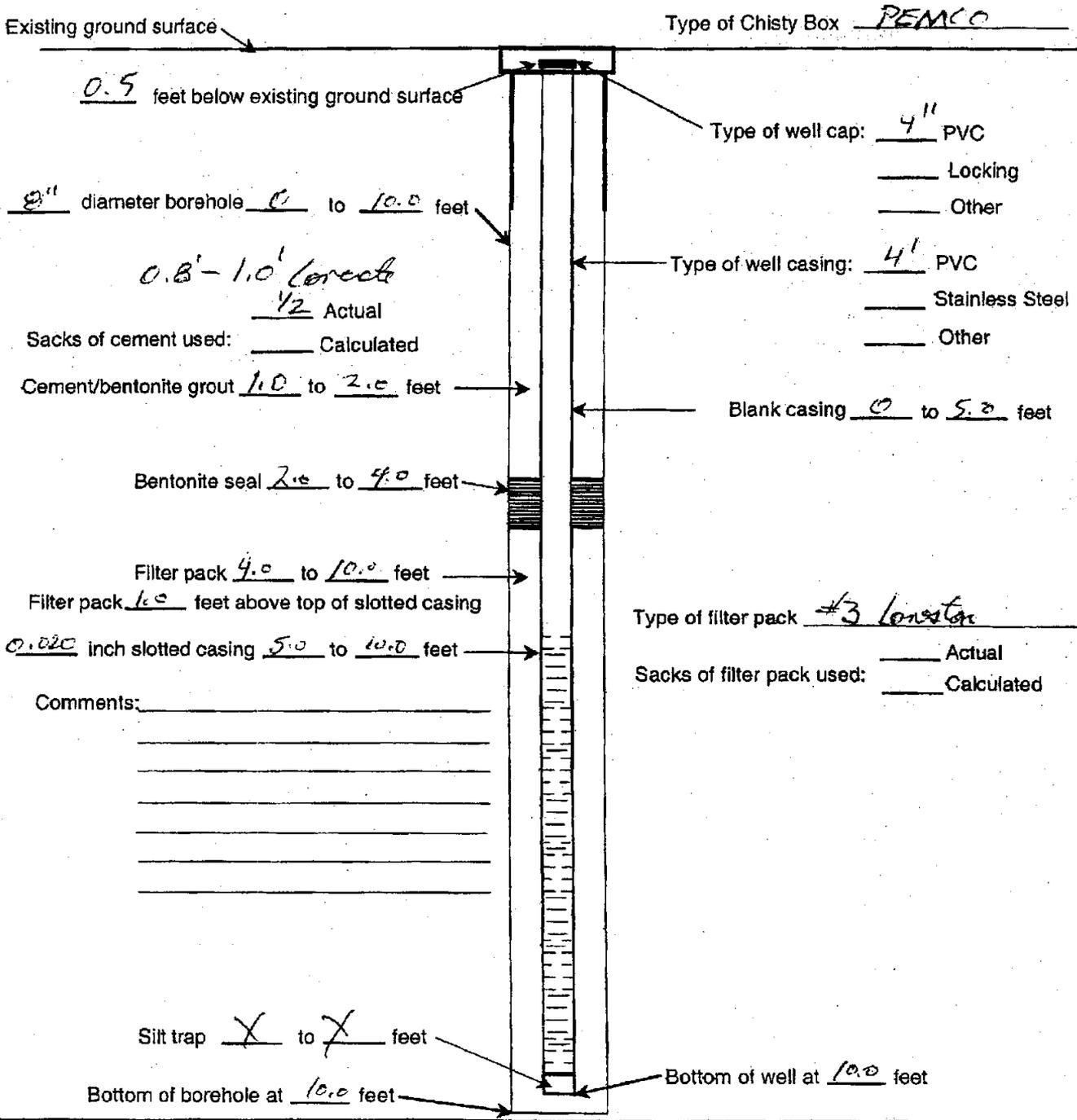
**Innovative  
Technical  
Solutions, Inc.**

PROJECT Hunter Point

PROJECT NO. 01-117.03

LOCATION Hunter Point / UCSF BORING DEPTH 10.0 BORING NO. EX-9  
 SURFACE ELEVATION N/A DATE BEGAN 8/12/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/12/2002

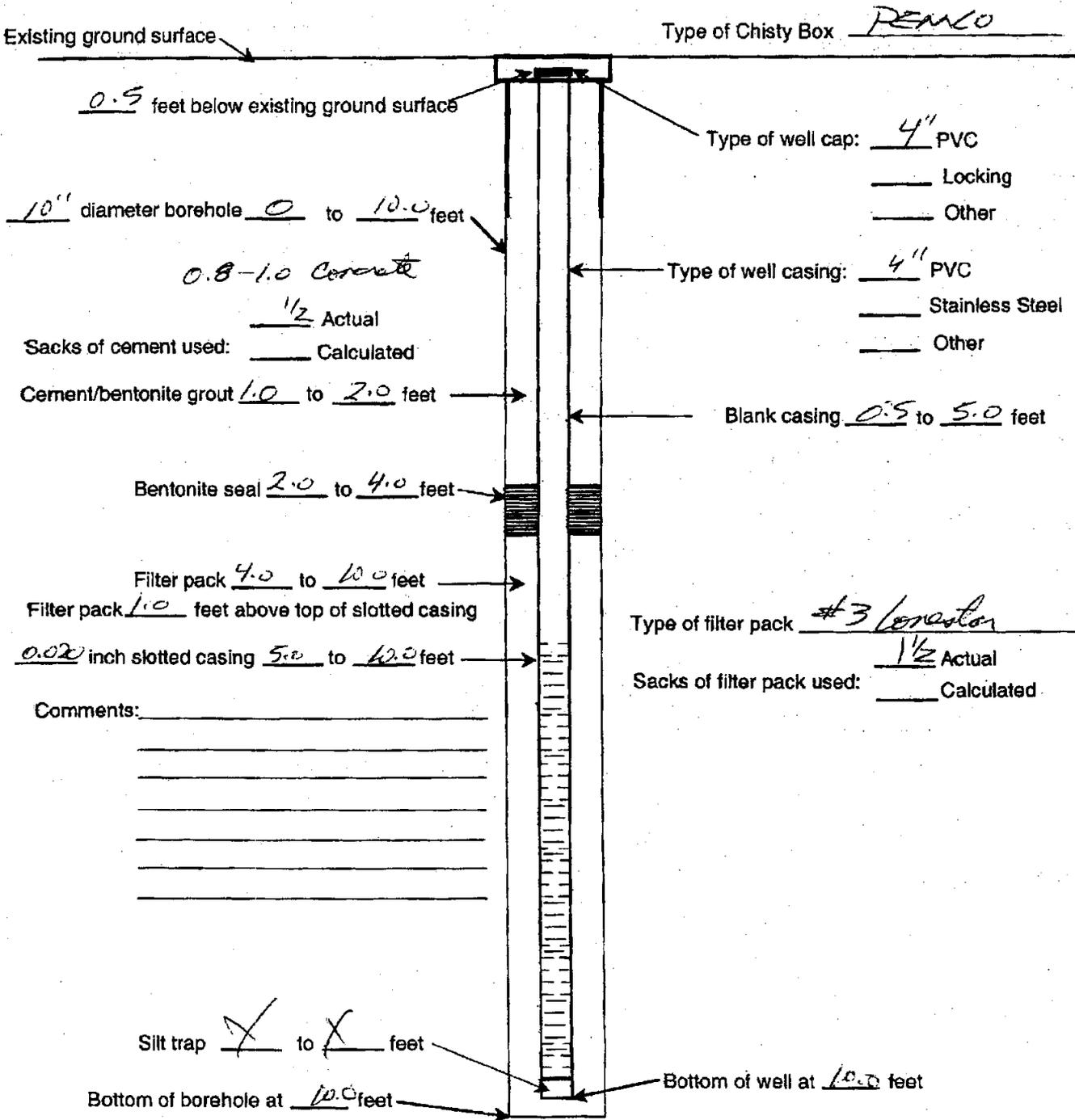
### BELOW GROUND COMPLETION



PROJECT Hunter Point  
 PROJECT NO. 01-117-03

LOCATION Hunter Point BORING DEPTH 10.0 BORING NO. EX-10  
 SURFACE ELEVATION NA DATE BEGAN 8/12/2002 LOGGED BY Rob Nelson  
 DRILLING METHOD 8" HSA DATE FINISHED 8/12/2002

**BELOW GROUND COMPLETION**



PROJECT Hunter Point  
 PROJECT NO. 01-117.03