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ENVIRONMENTAL PROTECTION
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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 7
901 NORTH FIFTH STREET
KANSAS CITY, KANSAS 66101

IN THE MATTER OF:)
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IN THE MATTER OF:)
WEST SIDNEY GAS PLANT)
Sidney, Nebraska)
)
MARATHON OIL COMPANY)
)
)
RESPONDENT)
)
Proceeding under Section 7003 of)
the Resource Conservation and)
Recovery Act, 42 U.S.C. Section)
6900, et seq., as amended.)
)

EPA DOCKET NO.
RCRA 07-2010-0022

RCRA § 7003
ADMINISTRATIVE ORDER ON CONSENT

In the matter of:
West Sidney Gas Plant- Sidney, Nebraska
Marathon Oil Company
RCRA § 7003 Administrative Order on Consent
EPA Docket No.: RCRA 7003-2010-0022

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I. INTRODUCTION

1. This Administrative Order on Consent (AOC) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and Respondent Marathon Oil Company. This AOC provides for the performance of a Corrective Measures Study (CMS) that identifies, compares, and recommends alternative potential remedies to address the contamination at and/or originating from Marathon Oil's Facility (Facility) and Corrective Measures Implementation (CMI) that implements the remedy selected by EPA to prevent, mitigate, and/or remediate any migration or release of solid and/or hazardous wastes and/or hazardous constituents at, and/or from, the Facility, including any Additional Work that may be required by Section XXVII (Additional Work) of this AOC, by Respondent in connection with the former West Sidney Gas Plant located near Sidney, Nebraska (hereinafter referred to as the "Facility"). In entering into this AOC, the mutual objectives of EPA and Respondent are to identify, investigate, remedy, and/or prevent the potential endangerment to human health and/or the environment from activities involving solid waste or constituents of such wastes, and to insure that the Work ordered by EPA be designed and implemented to protect human health and/or the environment. These mutual objectives are further described in the Corrective Measures Study Statement of Work (CMS SOW) attached hereto as Attachment 1 and the Corrective Measures Implementation Statement of Work (CMI SOW) attached here to as Attachment 2, which are hereby incorporated into this AOC by reference. Respondent shall finance and perform the Work in accordance with this AOC; plans, standards, specifications and schedules set forth in this AOC; and/or plans, standards specifications, and schedules developed by Respondent and approved by EPA pursuant to this AOC.
2. EPA alleges that Respondent has contributed or is contributing to the past or present handling, storage, treatment, transportation, or disposal of solid waste or constituents of such wastes that may present an imminent and substantial endangerment to health or the environment.
3. EPA has notified the State of Nebraska of this action pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).
4. Respondent's participation in this AOC shall not constitute or be construed as an admission of liability. Respondent neither admits nor denies the factual allegations and legal conclusions set forth in this AOC (Sections V and VI, Findings of Fact and Conclusions of Law).
5. EPA and Respondent acknowledge that this AOC has been negotiated by the parties in good faith and that this AOC is fair, reasonable, and in the public interest.

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II. JURISDICTION

6. This AOC is issued under the authority vested in the Administrator of EPA by Section 7003 of RCRA, which authority has been delegated to the Director of the Air and Waste Management Division of EPA Region 7 by Delegations R7-8-022-A and R7-8-022-C.

7. Respondent agrees to undertake and complete all actions required by the terms and conditions of this AOC. In any action by EPA or the United States to enforce the terms of this AOC, Respondent consents to and agrees not to contest the authority or jurisdiction of the EPA to issue or enforce this AOC, and agrees not to contest the validity of this AOC or its terms or conditions.

III. PARTIES BOUND

8. This AOC shall apply to and be binding upon EPA, and on Respondent and Respondent's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including but not limited to contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of the Site. Any change in the ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this AOC.

9. Respondent shall provide a copy of this AOC to any subsequent owners or successors before a controlling interest in ownership rights, stock, assets or the Site is transferred. Respondent shall be responsible for and liable for completing all of the activities required pursuant to this AOC, regardless of whether there has been a transfer of ownership or control of the Site or whether said activities are to be performed by employees, agents, contractors, subcontractors, laboratories, or consultants of Respondent. Respondent shall provide a copy of this AOC within seven days of the Effective Date of this AOC, or the date that such services are retained, to all contractors, subcontractors, laboratories, and consultants that are retained to conduct or monitor any portion of the Work performed pursuant to this AOC. Respondent shall condition all contracts or agreements with contractors, subcontractors, laboratories and/or consultants in connection with this AOC, on compliance with the terms of this AOC. Respondent shall ensure that its contractors, subcontractors, laboratories, and consultants comply with this AOC.

10. Not later than sixty (60) days prior to any voluntary transfer by Respondent of any interest in the Site or the operation of the facility, Respondent shall notify EPA of the proposed transfer. In the case of a voluntary transfer through a bankruptcy, Respondent shall notify EPA within twenty-four (24) hours of the decision to transfer property. Respondent shall notify EPA of any involuntary transfers immediately upon Respondent's initial receipt of notice of any

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involuntary transfer. Not later than three (3) days after any transfer, Respondent shall submit copies of the transfer documents to EPA.

IV. DEFINITIONS

11. Unless otherwise expressly provided herein, terms used in this AOC that are defined in the RCRA statute shall have the meaning assigned to them in that statute. Whenever the terms listed below are used in this AOC the following definitions apply:

“AOC” shall mean this Administrative Order on Consent, any amendments thereto, and any documents incorporated by reference into this AOC.

“CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

“Data Quality Objectives” shall mean those qualitative and quantitative statements derived from the outputs of a scientific and legally defensible data collection planning process.

“Day” shall mean a calendar day unless expressly stated otherwise.

“Effective Date” shall be the date on which EPA signs this AOC following the public comment period which is held pursuant to Section XXIX (Public Comment on this AOC).

“RCRA” shall mean the Resource Conservation and Recovery Act (also known as the Solid Waste Disposal Act), as amended, 42 U.S.C. § 6901, *et seq.*

“Site” or “Facility” shall mean the West Sidney Gas Plant located in Sidney, Nebraska and all areas impacted and potentially impacted by contaminants from this Facility

“SOW” shall mean CMS SOW that is attached to this AOC as Attachment 1 and the CMI SOW that is attached to this AOC as Attachment 2.

“Work” shall mean all the activities and requirements specified in this AOC including, but not limited to those requirements set forth in the SOW’s and in Section IX (Work To Be Performed) of this AOC, but excluding those required by Section XVII (Record Retention).

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V. FINDINGS OF FACT

12. Respondent is a corporation organized under the laws of the State of Ohio and is authorized to do business in the State of Nebraska.

13. Respondent is the owner of the property where the West Sidney Gas Plant (Facility) is located.

14. In June 1954, Respondent purchased the surface property for the West Sidney Gas Plant and began operation of an anhydrous ammonia refrigerated absorption oil gas processing plant at this location later that year. The plant was designed to process raw natural gas. Processes performed at the Facility included separation of water and liquid hydrocarbons from the inlet raw natural gas streams using glycol (ethylene glycol or triethylene glycol). The natural gas streams were compressed and combined at a pressure high enough for the gas to be processed and for the dry natural gas to flow into the sales gas flowline. The gas stream was chilled and then contacted with a chilled lean/absorption oil stream of about the same temperature in an absorber/stripper column to recover the natural gas liquids (NGL) from the natural gas stream. Waste streams from these processes included: used absorption oil (lean oil), wet glycol (ethylene glycol or triethylene glycol), produced water and an unidentified hydrocarbon liquid. These waste streams were either disposed of in one of the onsite unlined surface impoundments, recovered/recycled at the facility, or disposed in an onsite injection well.

15. From approximately 1964 until 1982, Respondent operated three surface impoundments in the northwest corner of the Facility. These surface impoundments were excavated into native soils and were not lined. Wastes disposed of in these surface impoundments include unknown quantities of liquid hydrocarbons not meeting sales specification, produced water with entrained hydrocarbons, lean/absorption oil, compressor cylinder lube oil, used glycol (ethylene or triethylene glycol) and storm water.

16. Produced water is a by-product of the petroleum production process and is brought to the surface along with the petroleum product. Produced water can contain various radionuclide and volatile and semi-volatile organic compound hydrocarbon contaminants. Chemical analyses of produced water have been characterized by high concentrations of volatile organic compounds including benzene and toluene, and semi-volatile organic compound hydrocarbons such as aliphatic hydrocarbons and a series of alkylated polycyclic aromatic hydrocarbons (primarily naphthalenes and phenanthrenes). Produced water was historically disposed of in the onsite unlined waste surface impoundments.

17. The volatile organic compounds benzene and toluene are commonly found in produced

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water which are by-products of petroleum production and processing operations.

18. Lean oil absorption is the process in which NGLs are removed by contacting the natural gas with a liquid hydrocarbon solvent (lean oil or absorption oil). The oil is lean in the sense that it contains little or no hydrocarbon products of the type to be extracted from the gas. The physical properties of lean oil vary with each plant. However, lean oil is a liquid, the weight of which usually falls between kerosene and paint thinner. Lean/absorption oil wastes were historically disposed of in the onsite unlined waste surface impoundments.

19. Glycols (ethylene glycol and triethylene glycol) were used to dehydrate the raw gas stream to prevent the formation of hydrates (icy mixture of hydrocarbon and water) in the gas chiller and remove water from the inlet gas stream. Glycols were used for gas dehydration due to their ability to absorb large amounts of water. In addition to having an affinity for water, glycol has an affinity for the aromatic hydrocarbons benzene, toluene, ethylbenzene and xylene (BTEX), which are typically present in natural gas at levels between 10 and 1000 parts per million (ppm) per volume. These BTEX compounds are absorbed by the glycol from the natural gas along with the produced water. Waste glycols containing the absorbed contaminants were historically disposed of in at least one of the onsite unlined surface impoundments.

20. In 1982, Respondent removed the berms surrounding the surface impoundments and used the berm materials to fill in and grade the area.

21. The surface impoundments were replaced with a steel tank in 1987. The waste disposal management used at the Facility between 1982 and 1987 is unknown to EPA.

22. In 1985, the gas unit was downsized. A smaller skid-mounted unit replaced the process originally used at the plant. The smaller unit utilized a propane refrigeration cycle to chill the gas and condense an NGL mixture. The skid-mounted unit did not utilize an absorption oil. The NGL was no longer fractionated into separate propane, butane or natural gas streams. The two principal products were natural gas and an NGL mixture. The Facility operated in this reduced capacity until 1989. The wastes associated with the skid mounted unit included produced water, glycol (ethylene glycol or triethylene glycol) and a hydrocarbon liquid.

23. Respondent sold the surface rights of the Facility to Central Resources, Inc. ("Central") on April 26, 1989. The effective date of the sale was October 1, 1988. Central produced a natural gas liquid mix product along with a 1000 BTU residue gas stream from October 1988 until November 1992.

24. Respondent initiated groundwater investigations at the Facility in 1982 after a neighboring farmer complained about free hydrocarbons in a well he installed adjacent to the

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Facility. The farmer reported an oily film on the water withdrawn from the well. In June of 1982 the Director of the Nebraska Department of Environmental Control (NDEC) was contacted by the Utilities Superintendent of the City of Sidney, Nebraska, concerning a suspected groundwater problem at the West Sidney Gas Plant. The Utilities Superintendent and the farmer collected a sample from an observation well on the farmer's property which contained free phase hydrocarbon.

25. In July of 1982, samples from onsite and offsite monitoring wells and free product from the main operation were collected by representatives of the NDEC laboratory for analysis. A thick, light yellow, oily material was noted in two wells located immediately adjacent to the West Sidney Gas Plant. This oily material was not noted in groundwater collected from the onsite monitoring wells; however, the groundwater collected from these wells exhibited a gasoline-like odor. Samples from the main operation unit at the site included a colorless liquid with a gasoline-like odor and a yellow-colored liquid with a kerosene-like odor (so called lean oil or absorption oil). The conclusions of the NDEC report stated that the samples from the offsite wells were a mixture of the lean oil and gasoline made at the Facility.

26. From 1982 through 1986 Respondent installed several monitoring wells. Pursuant to a civil Consent Decree entered with the State of Nebraska in August 1989, Respondent implemented an extraction/spray irrigation system and conducted periodic monitoring of specified wells. Respondent began operating the extraction system in 1990 and operated it every irrigation season until September 1993, when it was shut down.

27. In August of 1993, a representative of the Nebraska Department of Environmental Quality (NDEQ) and Respondent representatives observed the collection of free product from Respondent's monitoring well MOC F-89, which is approximately 3/4 of a mile east of the West Sidney Gas east property line and downgradient of the former surface impoundments.

28. In October of 1994, Central sold the property rights of the Facility to Scrapco of Sidney, Nebraska.

29. In August 1997 soils from the former flare pit area were excavated down to a depth of approximately 15 feet. The excavation was backfilled with clean soil and the excavated soils were spread across the surface of the southern half of the Facility. The flare pit received hydrocarbons from process vessel drips and drains, compressor blow-down, and water produced during natural gas processing operations.

30. In 1998, Respondent regained ownership of the surface and subsurface of the Facility.

31. On January 22, 1998, Respondent met with EPA and provided a detailed presentation

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concerning the concentrations of site contaminants emanating from the Facility since 1987. As a result of this meeting, the parties agreed that EPA would attend the next sampling event and would collect samples from the wells used by Respondent to monitor the groundwater.

32. In May 1998, EPA collected split samples during the Respondent's spring sampling event. EPA collected split samples from two irrigation wells along the West Sidney Gas Plant east property line (Kurz No. 1 and Kurz No. 2), an irrigation well approximately one-half mile east of the West Sidney Gas Plant property line (Kurz No. 3), two Respondent monitoring wells (monitoring wells MOC I-88 and MOC G-89), and the closest downgradient domestic water supply well (Bob Kurz Jr. residential well). The sample analyses detected eight inorganic substances (all levels were below Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act) and three organic compounds (benzene, ethylbenzene, and xylene). Benzene was detected at levels above its MCL of 5 micrograms per Liter ($\mu\text{g/L}$). Ethylbenzene and xylene were detected but the concentrations were below their MCLs, which are 700 $\mu\text{g/L}$ and 10,000 $\mu\text{g/L}$, respectively. Toluene was not detected in the split samples.

33. During the May 1998 sampling event, monitoring wells were sampled using dedicated pumps which were set several feet below the top of the water table. Since the contaminants associated with the site have specific gravities less than water, they tend to float on the water table. EPA detected the presence of a light non-aqueous phase liquid (LNAPL) layer in the unnumbered monitoring well near the former surface impoundments area during this sampling trip.

34. From May through July 1999, the Respondent installed 13 monitoring wells (MOC 1-99 through MOC 11-99, MOC VW-99, and Plant Well 2), installed an air injection bio-venting system (MOC VMP-99), conducted soil sampling and analysis, conducted soil gas sampling and analysis, and conducted groundwater sampling and analysis of onsite and offsite monitoring wells and domestic wells in the vicinity of the Facility.

35. In May 1999 the Respondent installed a bioventing system in the former flare pit area to treat petroleum hydrocarbon-impacted soils beneath the former flare pit. The system consists of one combination air injection/groundwater monitoring well, one vapor monitoring point, a blower system and enclosure and associated plumbing and power supply. Monitoring of the bioventing system has indicated that contaminant concentrations have decreased although soil contamination still exists in the area based on the results of the system analysis conducted on 2007 and 2008.

36. As part of the Respondent's Risk Based Closure Plan, dated April 2000, Respondent began biennial groundwater sampling of the facility's plume monitoring wells during April 2000. The Risk Based Closure Plan indicates that the plume monitoring wells for biennial sampling

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include MOC VW-99, MOC 2-99, MOC 3-99, MOC 5-99, and MOC 7-99, and the perimeter monitoring wells for biennial sampling include MOC 4-99, MOC 6-99, MOC 8-99, and MOC 9-99.

37. As recommended in the Respondent's Risk Based Closure Plan, dated April 2000, Respondent began semi-annual groundwater sampling of perimeter monitoring wells MOC I-88 and MOC G-89, and the residential well during the spring of 2001. Water from the residential well (Kurz Jr. well) was sampled at locations prior to, and following, the resident's treatment system.

38. On April 23, 2002, while Respondent purged groundwater from monitoring well MOC I-88, EPA personnel observed an oily sheen on collected purge water. Following the observation of the oily sheen on the purge water, EPA personnel requested the sampling team use an interface probe. According to the interface probe, a LNAPL was present in MOC I-88 with a thickness of 0.09 feet. The water sample collected from the well was clear but a hydrocarbon odor was present.

39. LNAPL is one of a group of organic substances that are relatively insoluble in water and are less dense than water, LNAPLs such as oils, tend to spread across the surface of the water table and form a layer on top of the water table. Analysis of the LNAPL collected by the respondent has detected the presence of toluene, ethylbenzene, isopropylbenzene, n-propylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and xylenes.

40. EPA collected split samples from several monitoring wells at the site on April 23, 2002. Several of EPA's split samples contained benzene concentrations greater than the MCL (5.0 $\mu\text{g/L}$). Benzene was detected in EPA split samples collected from monitoring well MOC I-88 at concentrations of 7.2 $\mu\text{g/L}$ and 7.4 $\mu\text{g/L}$.

41. Respondent collected groundwater samples from all of the monitoring wells and several residential wells at the site during the April 2002 sampling event. Benzene was detected in samples collected from monitoring wells MOC I-88, MOC VW-99, MOC 2-99, MOC 3-99, and MOC 5-99 with concentrations ranging from 2.9 $\mu\text{g/L}$ to 14 $\mu\text{g/L}$. The concentrations of benzene in the samples collected from monitoring wells MOC I-88 (6.7 $\mu\text{g/L}$), MOC 5-99 (8.3 $\mu\text{g/L}$), and MOC 3-99 (14 $\mu\text{g/L}$) were greater than the MCL (5.0 $\mu\text{g/L}$). Other contaminants of concern detected during the sampling event included ethylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.

42. In November 2002, prior to purging monitoring well MOC I-88, Respondent measured the depth to water using an oil/water interface probe. Respondent measured a 1.05-foot-thick layer of LNAPL, a greater than ten-fold increase in thickness since the previous measurement in

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April 2002.

43. In April 2003, prior to purging monitoring well MOC I-88, Respondent measured a 1.82-foot-thick layer of LNAPL, an approximately eighty percent increase since the previous measurement in November 2002 and a greater than twenty-fold increase since the LNAPL was first measured in April 2002. The apparent LNAPL thickness in this well decreased to 0.45 feet in July of 2004, and more thereafter.

44. A Unilateral Administrative Order (UAO), EPA Docket No. RCRA-07-2003-0316, was issued by EPA to Respondent on September 29, 2003. The UAO required the Respondent to perform groundwater sampling, analysis, and monitoring to fully determine the nature and extent of any release of hazardous waste and/or constituents within solid wastes at or from the Facility.

45. Total Petroleum Hydrocarbon (TPH) is a measure of the concentration or mass of petroleum hydrocarbon constituents present in a given amount of soil or water.

46. Historically, chemical analyses of groundwater samples from the Facility have detected the presence of benzene, toluene, ethylbenzene and xylene (BTEX) and total recoverable petroleum hydrocarbons (TRPH). The levels of dissolved benzene detected in groundwater samples collected onsite and offsite at the West Sidney Gas Plant Site have historically ranged from less than 5 $\mu\text{g/L}$ up to 380 $\mu\text{g/L}$. The most recent extent of the dissolved phase contamination in groundwater is depicted in Attachment 4.

47. Concentrations of dissolved phase contaminants have decreased since groundwater sampling began at the Site in the 1980's. Benzene has not been detected in groundwater above the MCL of 5 $\mu\text{g/L}$ since April 2005. Ethylbenzene has never been detected above the MCL of 700 $\mu\text{g/L}$ in the current monitoring well system. Toluene and Xylene have never been detected in the monitoring well network in excess of their respective MCLs of 1,000 $\mu\text{g/L}$ and 10,000 $\mu\text{g/L}$. The EPA has not established MCLs for the 1,2,3-Trimethylbenzene, 1,2,4-Trimethylbenzene, or 1,3,5-Trimethylbenzene, however EPA does have risk based screening concentrations for 1,2,4-Trimethylbenzene, or the 1,3,5-Trimethylbenzene in tapwater at 15 $\mu\text{g/L}$ and 370 $\mu\text{g/L}$ respectively. Concentrations of benzene, toluene, ethylbenzene, and xylene have decreased significantly since groundwater samples were collected for analysis of these compounds.

48. Contamination from the former West Sidney Gas Plant has been identified in the Brule formation. The Brule formation is a source of irrigation water, water for livestock and potable drinking water for farmers and rural users in the Lodgepole Creek drainage basin west of Sidney. It also supplies a portion of the municipal water supply for the City of Sidney, Nebraska. The direction of groundwater flow in the vicinity of the Facility is toward the east and northeast, in

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the direction of the Sidney, Nebraska, municipal well field. The municipal well field is approximately 3.5 miles away from the Facility. In addition, approximately three domestic wells are located within a one-mile radius of the groundwater contamination plume emanating from the Facility.

49. Benzene is a clear, volatile, colorless, highly flammable liquid with a characteristic sweet odor and is usually associated with petroleum products. When released into the environment benzene volatilizes quickly from the soil or is broken down by bacteria if complementary conditions are present. Benzene is readily soluble in water; therefore, it is easily transported by groundwater flow. Benzene has a specific gravity less than water and can be a constituent of an LNAPL on groundwater. The MCL for benzene is $5 \mu\text{g/L}$. Benzene is a Class A carcinogen (human carcinogen). Exposure to liquid and vapor may produce primary irritation to skin, eyes, and upper respiratory tract. Acute exposure to benzene results in central nervous system depression. Headache, dizziness, nausea, convulsions, coma, and death may result.

50. Ethylbenzene is a colorless liquid with a pungent aromatic odor. Ethylbenzene has a specific gravity less than water and tends to float. Routes of exposure for ethylbenzene include inhalation, ingestion, eye and skin contact. Harmful effects of exposure include kidney, liver, skin and chronic respiratory disease. The MCL for ethylbenzene is $700 \mu\text{g/L}$.

51. Toluene is a clear, colorless, noncorrosive liquid with a sweet, pungent, benzene-like odor. Toluene has a specific gravity less than water and tends to float. Routes of exposure of toluene include inhalation of vapor, percutaneous absorption of liquid, ingestion, skin and eye contact. Exposure to toluene may cause irritation of the eyes, respiratory tract, and skin. Repeated or prolonged contact with liquid may cause removal of natural lipids from the skin, resulting in dry, fissured dermatitis. Liquid splashed in the eyes may cause irritation. Acute exposure to toluene predominantly results in central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness, decreased coordination and staggering gait, skin paresthesia, collapse, and coma. The MCL for toluene is $1,000 \mu\text{g/L}$.

52. Xylene is a clear liquid, soluble in alcohol and ether, insoluble in water and has a specific gravity less than water and tends to float. Routes of exposure to xylene include inhalation of vapor and to a small extent, percutaneous absorption of liquid as well as ingestion and skin and eye contact. Xylene vapor may cause irritation of the eyes, nose, and throat. Repeated or prolonged skin contact with xylene may cause drying and defatting of the skin which may lead to dermatitis. Liquid xylene is irritating to the eyes and mucous membranes, and aspiration of a few milliliters may cause chemical pneumonitis, pulmonary edema, and hemorrhage. Repeated exposure of the eyes to high concentrations of xylene vapor may cause reversible eye damage. Acute exposure to xylene vapor may cause central nervous system depression and minor

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reversible effects upon liver and kidneys. At high concentrations, xylene vapor may cause dizziness, staggering, drowsiness, and unconsciousness. At very high concentrations, breathing xylene vapors may cause pulmonary edema, anorexia, nausea, vomiting, and abdominal pain.

53. Three isomers of trimethylbenzene (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene) have been detected in groundwater. Trimethylbenzenes occur naturally in coal tar and petroleum crude oil. They are a major component of a petroleum refinery distillation fraction known as the C9 aromatic fraction. The primary use of the C9 fraction is as a gasoline additive. Isolated 1,2,4-trimethylbenzene is used in a number of industrial applications. It is used chiefly as the raw material for production of trimellitic anhydride. It is also used in the manufacture of pharmaceuticals and dyes. The EPA has not established MCLs for the 1,2,3-Trimethylbenzene, 1,2,4- Trimethylbenzene, or 1,3,5- Trimethylbenzene, however EPA does have risk based screening concentrations for 1,2,4- Trimethylbenzene, or the 1,3,5- Trimethylbenzene in tapwater at $15\mu\text{g/L}$ and $370\mu\text{g/L}$ respectively.

54. On December 19, 2008, Marathon Oil purchased the Robert Kurz Jr. property adjacent to the former West Sidney Gas plant and demolished the residence and associated structures in October 2009. All remaining wells including all irrigation wells and the Kurz Jr. household well were abandoned during the summer of 2009. The oil-water separator and the above-ground water storage tank associated with the LNAPL recovery system were dismantled by Mr. Kurz Jr. and removed from the Facility on May 12, 2009.

55. In April 2009 Marathon Oil conducted surficial soil sampling over the southern portion of the West Sidney Gas plant. The sampling was conducted to assess potential surficial soil contamination originating from spreading soils that were excavated from the former flare pit over the surface of the southern half of the facility in August 1997. Analytical results of the samples did not detect site related compounds in excess of risk based levels.

56. Based on historical monitoring, measured LNAPL thicknesses in monitoring wells is variable and a relationship between groundwater elevation and LNAPL thickness has been demonstrated in select wells. The data indicate that as groundwater elevation increases the measured LNAPL thickness decreases. The most recent data have detected two areas of LNAPL accumulation. One centered around monitoring well MOC 3-99 and a second area centered around monitoring well MOC 7-99 (see Attachment 5).

57. Since the UAO was signed in September of 2003 the Respondent has conducted semi-annual groundwater sampling and gauging, LNPL sampling/gauging, additional well installation, continued the bioventing system in disposal pond area, and soil sampling. As part of the UAO, Marathon Oil submitted to EPA, in 2005, a draft report entitled Supplemental Site Characterization and Historic Data Review and Analysis Report and a draft Human Health Risk

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Assessment for the Former West Sidney Gas Plant. Based upon comments received from EPA, Marathon revised and submitted these reports in 2010. These documents are currently under review.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

58. Based on the Findings of Fact set forth above, and an administrative record supporting this AOC, EPA has determined that:

- a. Respondent is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).
- b. The wastes Benzene, Ethylbenzene, Toluene, and Xylene, and LNAPL generated during Respondent's production of petroleum gas at the Facility, are "solid wastes" as defined in Section 1004(27) of RCRA.
- c. The presence of solid wastes, hazardous wastes, hazardous constituents and/or hazardous substances in soils and ground water emanating from the Facility resulted from the past handling, storage, treatment, transportation and/or disposal of solid wastes, hazardous wastes, hazardous constituents and/or hazardous substances at the Facility.
- d. Respondent is alleged to have contributed to the handling, storage, treatment, and/or disposal of the solid and/or hazardous constituents and/or wastes at the Site through its petroleum production and processing operations.
- e. Conditions at the Site may present an imminent and substantial endangerment to human health and/or the environment within the meaning of Section 7003(a) of RCRA, 42 U.S.C. § 6973(a), as; (i) Benzene, Ethylbenzene, Toluene, Xylene, and LNAPL are in the groundwater at and near the Site; (ii) the known extent of the groundwater contaminant plume is approximately one mile in an east, northeast direction from the site; (iii) there is a municipal well field, domestic wells, and irrigation wells in use within the aquifer where the plume is located; and (iv) unacceptable human exposures may result.
- f. The actions required by this AOC may be necessary to protect human health and/or the environment.

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VII. ORDER ON CONSENT

59. Based upon the administrative record for the Site and the Findings of Fact (Section V) and Conclusions of Law and Determinations (Section VI) set forth above, and in consideration of the promises set forth herein, the following is hereby agreed to and ordered. Respondent shall comply with all provisions of this AOC, including, but not limited to, all appendices to this AOC and all documents incorporated by reference into this AOC.

60. Respondent shall finance and perform the Work in accordance with this AOC, plans, standards, specifications and schedules set forth in this AOC or developed by Respondent and approved by EPA pursuant to this AOC.

VIII. CONTRACTORS AND PROJECT COORDINATORS

61. Selection of Contractors, Personnel. All Work performed by, or on behalf of Respondent under this AOC shall be under the direction and supervision of qualified personnel. Within thirty (30) days of the Effective Date of this AOC, and before the Work begins, Respondent shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants, and laboratories to be used in carrying out the Work.

62. Project Coordinator. Within thirty (30) days of the Effective Date of this AOC, Respondent shall designate its Project Coordinator. Respondent shall notify EPA in writing within thirty (30) days of the Effective Date of this AOC of the name, address, phone number, electronic mail address and qualifications of its Project Coordinator. The EPA Project Coordinator will be:

**Robert Aston
AWMD/RCAP
U.S. EPA, Region 7
901 North 5th Street
Kansas City, Kansas 66101.**

EPA may also designate an Alternate Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of this AOC. EPA and Respondent have the right to change their respective Project Coordinators. The other party must be notified in writing at least fourteen (14) days prior to the change.

63. EPA will approve/disapprove of Respondent's Project Coordinator (original or replacement) based upon the person's qualifications and ability to effectively perform this role. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's

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review, for verification that such persons meet minimum technical background and experience requirements of the EPA. All persons under the direction and supervision of Respondent's Project Coordinator must possess all necessary professional licenses required by federal and state law.

64. The EPA Project Coordinator shall be EPA's designated representative for the Facility. Unless otherwise provided in this AOC, all reports, correspondence, notices, or other submittals relating to or required under this AOC shall be in writing and shall be sent to the EPA Project Coordinator at the address specified in Paragraph 62, unless notice is given in writing to Respondent of a change in address. Reports, correspondence, notices or other submittals shall be delivered by U.S. Postal Service, private courier service or electronic mail. All correspondence shall include a reference to the case caption EPA Docket No. RCRA 7003-2010-0022.

65. Respondent shall undertake and complete all of the Work to the satisfaction of EPA, pursuant to RCRA § 7003, 42 U.S.C. § 6973. All of the Work performed under this AOC shall be under the direction and supervision of Respondent's Project Coordinator and shall be in accordance with the terms of this AOC.

66. The Work undertaken pursuant to this AOC shall be conducted in compliance with all applicable EPA guidances, policies and procedures, and with this AOC and the attached SOWs and is subject to EPA approval.

IX. WORK TO BE PERFORMED

67. All Work undertaken pursuant to this Order shall be developed and performed in accordance with the CMS SOW, Attachment 1, and CMI SOW, Attachment 2.

68. Respondent shall conduct a Corrective Measures Study (CMS), in accordance with the CMS SOW, Attachment 1, to identify, compare, and recommend alternative potential remedies that will address the contamination at and/or originating from the Facility and will protect human health and the environment.

- a. Within sixty (60) calendar days of the approval of the Characterization Report referenced in paragraph 57, Respondent shall submit a CMS Work Plan, in accordance with Task I of Attachment 1, for EPA's review and approval.
- b. Within sixty (60) calendar days of EPA's approval of the CMS Work Plan, Respondent shall submit a CMS Report, in accordance with Task II of Attachment 1, for EPA's review and approval.

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69. Respondent shall conduct a Corrective Measures Implementation (CMI), in accordance with the CMI SOW, Attachment 2, to implement the remedy selected by EPA that will prevent, mitigate, and/or remediate any migration or release of solid wastes, hazardous wastes, and/or hazardous constituents at and/or from the Facility.
- a. Within sixty (60) calendar days of EPA's Final Remedy Decision Document, Respondent shall submit a CMI Work Plan in accordance with Task I of Attachment 2, for EPA's review and approval. The CMI Work Plan shall include an updated/revised Quality Assurance Plan (QAPP), a Sampling and Analysis Plan (SAP) (if additional sampling is necessary), an updated Public Involvement Plan (PIP) and Operations and Maintenance Plan (O&M).
 - b. Within thirty (30) calendar days from such time as Respondent has completed all construction activities required to be conducted by Respondent to implement the EPA selected remedy, Respondent shall submit a Corrective Measures Construction Completion Report (CMCCR), in accordance with Task II of Attachment 2, for EPA's review and approval.
 - c. Beginning five (5) years from the date of EPA's written approval of Respondent's Remedy CMCCR, and every five (5) years thereafter until this AOC has been terminated pursuant to Section XXVIII (Termination and Satisfaction), Respondent shall submit to EPA for review and approval a Remedy Performance 5-Year Review prepared in accordance with Task III of Attachment 2.
70. Semiannual Progress Reports: Respondent shall, at a minimum, submit written, signed Semiannual Progress Reports to EPA in accordance with Task III of Attachment 1 and Task V of Attachment 2. These Progress Reports shall be submitted to the EPA semiannually (twice a year), no later than the fifteenth (15) of January and no later than the fifteenth (15) of July. These Reports shall be submitted to the EPA project coordinator referenced above in Paragraph 62.
71. Upon Respondent's receipt from EPA of EPA's approval of each Report and Plan, Respondent shall implement each such approved Report and Plan in accordance with the terms and schedules contained therein.
72. Health and Safety Plan. Respondent shall develop a Health and Safety Plan or revise the existing Health and Safety Plan and it shall be implemented during the Work performed under this AOC. Respondent shall make a determination if the revision of the existing Health and Safety Plan is necessary prior to field work being performed or if EPA determines the need to revise the existing Health and Safety Plan. Respondent shall ensure that the existing Health and

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Safety Plan, and any revisions, shall cover all activities conducted in the field. The Health and Safety Plan shall comply with applicable Occupational Safety and Health Administration (OSHA) regulations.

73. Interim Measures. The Respondent shall evaluate available data and assess the need for interim measures (IM), in addition to those actions specifically required by this Order. When necessary, interim measures shall be to achieve the goal of stabilization which is to control or abate immediate threats to human health and/or the environment, and to prevent or minimize the spread of contaminants while long-term corrective measures alternatives are being evaluated.

a. In the event Respondent identifies an immediate or potential threat to human health or the environment, Respondent shall notify the EPA Project Coordinator, orally within 48 hours of discovery and notify EPA in writing within three (3) days of such discovery summarizing the immediacy and magnitude of the potential threat(s) to human health and/or the environment. Upon written request of EPA, Respondent shall submit to EPA, for EPA's review and approval, an IM Workplan that identifies interim measures which will mitigate the threat and a Schedule for Implementation that identifies when each measure will be implemented. If EPA determines that immediate action is required, the EPA Project Coordinator may orally authorize Respondent to act prior to EPA's receipt of the IM Workplan.

b. If EPA identifies an immediate or potential threat to human health and/or the environment, EPA will notify Respondent in writing. Within ten (10) days of receiving EPA's written notification, Respondent shall submit to EPA, for EPA's review and approval, an IM Workplan that identifies interim measures which will mitigate the threat and a Schedule for Implementation that identifies when each measure will be implemented. If EPA determines that immediate action is required, the EPA Project Coordinator may orally require Respondent to act prior to Respondent's receipt of EPA's written notification.

X. EPA APPROVAL OF DELIVERABLES

74. Deliverables required by this AOC shall be submitted to EPA for approval or modification pursuant to Paragraphs 68 and 69. All deliverables must be received at EPA by the due date specified in this AOC or by schedules developed pursuant to this AOC.

75. After review of any deliverable that is required pursuant to this AOC, EPA will: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA will not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within thirty (30) days, except where

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EPA determines that to do so would cause serious disruption to the Work or where EPA has disapproved previous submission(s) due to material defects and EPA determines that the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

76. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 75(a), (b), or (c), Respondent shall proceed to take any action required by the deliverable, as approved or modified by EPA subject only to Respondent's right to invoke the Dispute Resolution procedures set forth in Section XVIII (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 75(c) and EPA determines the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XIX (Penalties).

77. Resubmission of Deliverable. Upon receipt of a notice of disapproval, in whole or in part, pursuant to Paragraph 75(d) or (e), Respondent shall, within thirty (30) days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XIX (Penalties), shall accrue during the thirty (30) day opportunity to cure period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 75 and 76.

78. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 75(d) or (e), Respondent shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties for the deficient portion of the deliverable under Section XIX (Penalties).

79. In the event that a resubmitted deliverable, or portion thereof, is disapproved by EPA, EPA may again require Respondent to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item. Respondent shall implement any action as required in a deliverable which has been modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XVIII (Dispute Resolution).

80. If upon resubmission, a deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such deliverable timely and adequately unless Respondent invokes the dispute resolution procedures set forth in Section XVIII (Dispute Resolution) and EPA's action to disapprove or modify a deliverable is overturned pursuant to that Section. The provisions of Section XVIII (Dispute Resolution) and Section XIX

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(Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XIX (Penalties). All deliverables required to be submitted to EPA under this AOC, shall, upon approval or modification by EPA, be incorporated into and be enforceable under this AOC. In the event EPA approves or modifies a portion of a deliverable required to be submitted to EPA under this AOC, the approved or modified portion shall be enforceable under this AOC.

XI. MODIFICATION OF THE WORK PLAN

81. If at any time during the implementation of the Work to be Performed, Respondent identifies a need for a compliance date modification or revision of the Work Plan(s), Respondent shall submit a memorandum documenting the need for the modification or revision to the EPA Project Coordinator. EPA in its discretion will determine if the modification or revision is warranted and may provide written approval or disapproval. Any approved modified compliance date or Work Plan modification is incorporated by reference into this AOC.

82. Emergency Response. In the event of any action or occurrence during the performance of the Work that constitutes an emergency situation or may present an immediate threat to human health and the environment, Respondent shall immediately take all appropriate action to minimize such emergency or threat, and shall immediately notify the EPA's Project Coordinator. Respondent shall take such immediate and appropriate actions in consultation with EPA's Project Coordinator. Respondent shall then submit to EPA written notification of such emergency or threat at the Site within three (3) calendar days of such discovery. Respondent shall thereafter submit to EPA for approval, within twenty (20) days, a plan to mitigate this threat. EPA will approve or modify this plan, and Respondent shall implement this plan as approved or modified by EPA. In the case of an extreme emergency, Respondent may act as it deems appropriate, at its own risk, to protect human health or the environment.

XII. QUALITY ASSURANCE

83. As part of the Work to be Performed, Respondent shall include a Quality Assurance Project Plan (QAPP) for EPA review and approval. The QAPP shall address quality assurance, quality control, and chain of custody procedures for all sampling, monitoring and analytical activities. Respondent shall follow "EPA Requirements for Quality Assurance Project Plans" (QA/R5)" (EPA/240/B-01/003, March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998), and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/b-01/002, March 2001, reissued May 2006) as well as other applicable documents identified by EPA. The QAPP may be

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a revised version of the existing QAPP. Respondent shall make a determination if revision of the existing QAPP is necessary at the time the CMS and CMI workplans are submitted to EPA or if EPA determines the need to revise the existing QAPP. The QAPP shall be incorporated into this AOC by reference.

84. As part of the Work to be Performed, Respondent shall include Data Quality Objectives for any data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use as required by this AOC. Respondent shall make a determination if revision of existing Data Quality Objectives is necessary at the time the CMS and CMI workplans are submitted to EPA or if EPA determines the need to revise existing Data Quality Objectives.

85. Respondent shall ensure that laboratories used by Respondent for analysis perform such analysis according to the latest approved edition of "Test Methods for Evaluating Solid Waste (SW-846)" or other methods approved by EPA. If methods other than EPA methods are to be used, Respondent shall specify all such protocols in the applicable Work Plan. EPA may reject any data that does not meet the requirements of the approved Work Plan and EPA analytical methods and may require resampling and additional analysis.

86. Respondent shall ensure that all laboratories it uses for analyses participate in a quality assurance/quality control (QA/QC) program equivalent to the program that EPA follows. Respondent shall, upon EPA's request, make arrangements for EPA to conduct a performance and QA/QC audit of the laboratories chosen by Respondent, whether before, during, or after sample analyses. Upon EPA's request, Respondent shall have its laboratories perform analyses of samples provided by EPA to demonstrate laboratory QA/QC and performance. If the audit reveals deficiencies in a laboratory's performance or QA/QC, Respondent shall submit a plan to address the deficiencies and EPA may require resampling and additional analysis.

87. EPA reserves the right to require a change in laboratories for reasons which may include, but shall not be limited to, QA/QC, performance, conflict of interest, or confidential agency audit information. In the event EPA requires a laboratory change, Respondent shall propose two alternative laboratories within thirty (30) calendar days. Once EPA approves of the laboratory change, Respondent shall ensure that laboratory service shall be made available within fifteen (15) calendar days.

XIII. ADMINISTRATIVE DOCUMENTATION

88. Submission of Documentation. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondents shall submit to EPA documents

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developed during the course of performing the Work upon which selection of the final remedy decision may be based. EPA will maintain an administrative record file. The administrative record supporting this AOC and the Work to be performed shall be available for public review at the Region 7 Records Center located at 901 North 5th Street in Kansas City, Kansas 66101 and at the City of Sidney Public Library located at 1112 12th Avenue in Sidney, Nebraska 69162.

XIV. DOCUMENT CERTIFICATION

89. Any report or other document submitted by Respondent pursuant to this AOC which makes recommendations as to whether or not further actions are necessary, or makes any representation concerning Respondent's compliance or noncompliance with any requirement of this AOC shall be certified by a responsible corporate officer of Respondent. A responsible corporate officer means: a president, secretary, treasurer, or vice-president in charge of a principal business function, or any other person who performs similar policy or decision-making functions.

90. The certification required by Paragraph 89 above, shall be in the following form:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Title: _____

Date: _____

XV. SAMPLING, ACCESS AND DATA AVAILABILITY

91. All results of sampling, testing, modeling or other data generated (including raw data if requested) by Respondent, or on Respondent's behalf, during implementation of this AOC shall be validated by Respondent and submitted to EPA with Respondent's semiannual reports to

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EPA. Respondent shall also submit such sampling, testing, modeling or other data gathered in association with all reports at the time such a report is submitted to EPA. Respondent shall tabulate data chronologically by media. EPA will make available to Respondent data generated by EPA for the purposes of oversight of the Work unless it is exempt from disclosure by any federal or state law or regulation.

92. Respondent shall orally notify EPA at least thirty (30) days prior to conducting field sampling. At EPA's request, Respondent shall allow split or duplicate samples to be taken by EPA or EPA's representative.

93. Site Access. Pursuant to RCRA § 3007(a), 42 U.S.C. § 6927(a), Respondent shall provide access to the Site at reasonable times to EPA, EPA's contractors and oversight officials. Respondent shall also provide access at reasonable times to EPA, EPA's contractors and oversight officials to all records and documentation in its possession or control, including those records and documents in the possession or control of Respondent's contractors and employees, related to the conditions at the Facility and the actions conducted pursuant to this AOC. Respondent shall use its best efforts to gain access to areas owned by or in the possession of someone other than Respondent, as necessary to implement this AOC, as described in Paragraph 95. Such access shall be provided to EPA, its contractors and oversight officials. These individuals shall be permitted to move freely about the Site and appropriate off-site areas in order to conduct actions that EPA determines to be necessary. EPA, its contractors and oversight officials shall notify Respondent of their presence on the Site by presenting their credentials. All parties with access to the Site under this paragraph shall comply with all approved health and safety plans and regulations.

94. Pursuant to this Section, any denial of access at reasonable times to any portion of the Site property where a request for access was made for the purposes of enforcing the requirements of RCRA or this AOC shall be construed as a violation of the terms of this AOC subject to the penalty provisions outlined in Section XIX (Penalties) of this AOC.

95. Access Agreements. Where action under this AOC is to be performed in areas owned by, or in possession of, someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within forty-five (45) days of approval of any Work Plan for which access is necessary or as otherwise specified, in writing, by the EPA Project Coordinator. Any such access agreement shall provide for access by EPA and its representatives to move freely in order to conduct actions that EPA determines to be necessary. The access agreement shall specify that Respondent is not EPA's representative with respect to any liabilities associated with activities to be performed. Respondent shall provide EPA's Project Coordinator with copies of any access agreements. Respondent shall immediately notify EPA if after using Respondent's best efforts it is unable to obtain such agreements within the time

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required. Best efforts as used in this paragraph shall include, at a minimum, a certified letter from Respondent to the present owner of such property requesting access agreements to permit Respondent, EPA, and EPA's authorized representatives to enter such property, and the offer of payment of reasonable sums of money in consideration of granting access. Respondent shall, within ten (10) days of its receipt of a denial of access, submit in writing, a description of its efforts to obtain access. EPA may, at its discretion, assist Respondent in obtaining access. In the event EPA obtains access, Respondent shall undertake the Work on such property and Respondent shall reimburse EPA for all costs and attorney fees incurred by the United States in obtaining such access.

96. Confidential Business Information. Respondent may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this AOC under 40 C.F.R. § 2.203 in the manner described at 40 C.F.R. § 2.203(b) and substantiated with the information described at 40 C.F.R. 2.204(e)(4). Information EPA determines is confidential will be given the protection specified in 40 C.F.R. Part 2. If no such claim or substantiation accompanies the information when it is submitted to EPA, it may be made available to the public by EPA or the state without further notice to Respondent. Respondent agrees not to assert confidentiality claims with respect to any data related to Site conditions, sampling, monitoring or the Work performed pursuant to this AOC.

97. Privileged Documents. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege in lieu of providing documents, Respondent shall provide EPA with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the author's name and title; (4) the name and title of each addressee and recipient; (5) a description of the contents; and (6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this AOC shall be withheld on the grounds that they are privileged.

98. All data, information, and records created or maintained relating to any Solid or Hazardous Waste found at the Site shall be made available to EPA upon request unless Respondent asserts a claim that such documents are legally privileged from disclosure. Respondent shall have the burden of demonstrating to EPA by clear and convincing evidence that such privilege exists.

99. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

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100. Nothing in this AOC shall be construed to limit EPA's right of access, entry, inspection, and information gathering pursuant to applicable law, including but not limited to RCRA and CERCLA.

XVI. COMPLIANCE WITH OTHER LAWS

101. Respondent shall perform all actions required pursuant to this AOC in accordance with all applicable local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations in a timely manner so as not to delay the Work required by this AOC.

XVII. RECORD RETENTION

102. Respondent shall preserve all documents and information, including raw data, relating to the Work performed under this AOC, or relating to any solid waste or hazardous waste found at the Site, for ten (10) years following completion of the Work required by this AOC.

103. Respondent shall acquire and retain copies of all documents that relate to the Site that are in the possession of its employees, agents, accountants, contractors or attorneys. If outside parties will not provide Respondent with such copies, Respondent shall notify EPA in writing of the refusal of the outside party to provide copies to Respondent within two (2) days of the refusal. Respondent shall also provide documentation showing that Respondent has taken all reasonable steps to acquire the copies. This documentation shall be submitted to EPA within five (5) days of the refusal.

104. Respondent shall make available to EPA all employees and persons, including contractors, who engage in activities under this AOC and ensure their cooperation with EPA with respect to this AOC.

105. After the ten (10) year retention period and ninety (90) days before any document or information is destroyed, Respondent shall notify EPA that such documents and information are available to EPA for inspection, and upon request, shall provide the originals or copies (at no extra cost) of such documents and information to EPA. Notification shall be in writing and shall reference EPA Docket Number: RCRA-07-2010-0022 and shall be addressed to the Chief of EPA Region 7's RCRA Corrective Action and Permits Branch, 901 North 5th Street, Kansas City, Kansas 66101. In addition, Respondent shall provide documents and information retained under this Section at any time before expiration of the ten year retention period at the written request of EPA.

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106. All documents pertaining to this AOC shall be stored by Respondent in a centralized location at the Site, or an alternative location mutually approved by Respondent and EPA, to promote easy access by EPA or its representatives.

XVIII. DISPUTE RESOLUTION

107. Respondent shall raise any disputes concerning the Work required under this AOC to EPA (excluding any decision document(s) issued by EPA), in writing, within fifteen (15) days after receiving written notice from EPA regarding any aspect of the Work required under this AOC that Respondent disputes. EPA and Respondent shall expeditiously and informally attempt to resolve any disagreements. EPA and Respondent Project Coordinators shall first confer in an effort to resolve the dispute. If the Project Coordinators are unable to informally resolve the dispute within three (3) days of the first conference, Respondent shall notify EPA, within five (5) days, in writing of its objections. Written objections shall identify Respondent's objections, state the basis for those objections, and provide all data, analyses and information relied upon by Respondent. EPA and Respondent then have an additional fourteen (14) days from EPA's receipt of the objections to reach agreement. If an agreement is not reached within the fourteen (14) days, Respondent may request in writing, within five (5) days, a determination resolving the dispute by the Director of EPA Region 7's Air and Waste Management Division (Division Director), or his or her designee. The request should provide all information that Respondent believes is relevant to the dispute. If such request is submitted within five (5) days, the Division Director shall issue a determination in writing. EPA's final decision shall be incorporated into and become an enforceable part of this AOC and shall no longer be subject to dispute pursuant to this AOC. Respondent shall proceed in accordance with the Division Director's decision regarding the matter in dispute, regardless of whether Respondent agrees with the decision. If Respondent does not agree to perform or does not actually perform the Work in accordance with EPA's decision, EPA reserves the right in its sole discretion to conduct the Work itself, seek reimbursement from Respondent, seek enforcement of this AOC, seek stipulated penalties, and/or any other appropriate relief. Any disputes arising under this AOC are not subject to judicial review until such time as EPA seeks to enforce this AOC.

108. If EPA and Respondent reach agreement on the dispute at any stage, the agreement shall be set forth in writing and shall, upon signature of both parties, be incorporated into and become an enforceable part of this AOC.

109. The existence of a dispute and EPA's consideration of matters placed in dispute shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this AOC during the pendency of the dispute resolution process except as agreed by EPA in writing. The invocation of dispute resolution does not stay the accrual of stipulated penalties under this AOC.

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XIX. PENALTIES

110. Stipulated Penalties. Any time Respondent fails to comply with any requirement of this AOC, Respondent shall be liable for stipulated penalties in the amounts set forth in this section unless a Force Majeure event has occurred as defined in Section XX (Force Majeure) and EPA has approved the extension of a deadline as required by Section XX (Force Majeure). Compliance with this AOC by Respondent shall include completion of an activity or any matter under this AOC in accordance with this AOC, and within the specified time schedules approved under this AOC.

- a) \$500 per day for the first through seventh days of non-compliance;
- b) \$1,000 per day for the eighth through thirtieth days of non-compliance; and
- c) \$3,000 per day for the thirty-first and each succeeding day of non-compliance thereafter.

111. Penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of correction of the violation or completion of the activity. Payment shall be due within thirty (30) days of receipt of a demand letter from EPA. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this AOC, even where those violations concern the same event (e.g., submission of a Work Plan that is late and is of unacceptable quality).

112. If payment is not made within thirty (30) days of the date of Respondent's receipt from EPA of a written demand for payment of the penalties or of the date of agreement or decision resolving the dispute, interest shall begin to accrue on any unpaid stipulated penalty balance beginning on the first day after Respondent's receipt of EPA's demand letter, or the date of the agreement or decision resolving the dispute, and will accrue until such penalties and interest have been paid in full. Interest shall accrue at the Current Value of Funds Rate established by the Secretary of the Treasury. An additional penalty of six percent (6 %) per annum on any unpaid principal shall be assessed for any stipulated penalty payment which is overdue for ninety (90) days or more. The applicable rate of interest shall be the rate in effect at the time the interest accrues pursuant to 31 U.S.C. § 3717.

113. Respondent shall make payments by money order, certified check, company check, electronic funds transfer, or cashier's check payable to the Treasurer of the United States within thirty (30) days of Respondent's receipt of EPA's request, and shall be submitted to the following address:

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U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
P.O. Box 979077
St. Louis, Missouri 63197-9000.

114. Any payment made pursuant to this Section shall reference EPA Docket No. RCRA-07-2010-0022. Respondent shall send simultaneous notices of such payments, including copies of the money order, certified check, company check, electronic funds transfer, or cashier's check to EPA's Project Coordinator.

115. Respondent may dispute an EPA determination that it failed to comply with this AOC by invoking the dispute resolution procedures under Section XVIII (Dispute Resolution) unless the matter has already been in or is the subject of dispute resolution. Penalties shall accrue but need not be paid during the dispute resolution period. If Respondent does not prevail upon resolution, all penalties shall be due to EPA within thirty (30) days of resolution of the dispute. If Respondent prevails upon resolution, no penalties shall be paid. In the event that Respondent prevails in part, penalties shall be due on those matters in which Respondent did not prevail.

116. Neither the invocation of dispute resolution nor the payment of penalties shall alter in any way Respondent's obligation to comply with the terms and conditions of this AOC. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the terms and conditions of this AOC.

117. No payments under this Section shall be deducted for federal tax purposes.

118. Notwithstanding any other provision of this section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this AOC.

119. Civil Penalties. Violation of this AOC may subject Respondent to civil penalties of as provided for in Section 7003(b) of RCRA, 42 U.S.C. § 6973(b), as adjusted pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Debt Collection Improvement Act of 1996, 28 U.S.C. § 2461. Should Respondent violate this AOC or any portion hereof, EPA may carry out the required actions unilaterally, pursuant to any applicable authorities, and/or may seek judicial enforcement of this AOC.

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XX. FORCE MAJEURE

120. Respondent agrees to perform all requirements under this AOC within the time limits established under this AOC, unless the performance is delayed by a force majeure. For purposes of this AOC, a force majeure is defined as any event arising from causes beyond the control of Respondent, or any entity controlled by Respondent or Respondent's contractors, which delays or prevents performance of any obligation under this AOC despite Respondent's best efforts to fulfill the obligation. The requirement that the Respondent exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event: (a) as it is occurring, and (b) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. Force majeure does not include financial inability to complete the Work, increased cost of performance, changes in Respondent's business or economic circumstances, or inability to attain media cleanup standards.

121. If any event occurs or has occurred that may delay the performance of any obligation under this AOC, whether or not caused by a force majeure event, Respondent shall orally notify EPA within forty-eight (48) hours of when Respondent knew or should have known that the event might cause a delay. Such notice shall: (a) identify the event causing the delay, or anticipated to cause delay, and the anticipated duration of the delay; (b) provide Respondent's rationale for attributing such delay to a force majeure event; (c) state the measures taken or to be taken to prevent or minimize the delay; (d) estimate the timetable for implementation of those measures; and (e) state whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health or the environment. Respondent shall undertake best efforts to avoid and minimize the delay. Failure to comply with the notice provision of this paragraph and to undertake best efforts to avoid and minimize the delay shall waive any claim of force majeure by Respondent. Respondent shall be deemed to have notice of any circumstances of which its contractors had or should have had notice.

122. If EPA determines that a delay in performance or anticipated delay in fulfilling a requirement of this AOC is or was attributable to a force majeure, then the time period for performance of that requirement will be extended as deemed necessary by EPA. If EPA determines that the delay or anticipated delay has been or will be caused by a force majeure, then EPA will notify Respondent, in writing, of the length of the extension, if any, for performance of such obligations affected by the force majeure. Any such extensions shall not alter Respondent's obligation to perform or complete other tasks required by this AOC which are not directly affected by the force majeure.

123. If EPA disagrees with Respondent's assertion of a force majeure, then Respondent may elect to invoke the dispute resolution provision, and shall follow the procedures set forth in

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Section XVIII (Dispute Resolution). In any such proceeding, Respondent shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that Respondent's best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of this section. If Respondent satisfies this burden, then EPA will extend the time for performance as EPA determines is necessary.

XXI. RESERVATION OF RIGHTS

124. Notwithstanding any other provisions of this AOC, the United States retains all of its authority to take, direct, or order any and all actions necessary to protect public health or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste or constituents of such wastes, on, at, or from the Site, including but not limited to the right to bring enforcement actions under RCRA, CERCLA, and any other applicable statutes or regulations.

125. EPA reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this AOC, including without limitation the assessment of penalties under Section 7003 of RCRA, 42 U.S.C. § 6973.

126. This AOC shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, claims, and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory, or common law authority of the United States.

127. This AOC is not intended to be nor shall it be construed to be a permit. Respondent acknowledges and agrees that EPA's approval of the Work and/or Work Plan does not constitute a warranty or representation that the Work and/or Work Plans will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this AOC shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, or federal laws and regulations.

128. Notwithstanding any other provision of this AOC, no action or decision by EPA pursuant to this AOC, including without limitation, decisions of the Division Director, or any authorized representative of EPA, shall constitute final agency action giving rise to any right of judicial review prior to EPA's initiation of a judicial action to enforce this AOC, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this AOC.

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XXII. OTHER CLAIMS

129. By issuance of this AOC, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA will not be deemed a party to any contract, agreement or other arrangement entered into by Respondent or its officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, contractors, or consultants in carrying out actions pursuant to this AOC.

130. Respondent waives all claims against the United States relating to or arising out of conduct of this AOC, including, but not limited to, contribution and counterclaims.

131. Respondent shall bear their own litigation costs and attorney fees.

132. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive or other appropriate relief relating to the Facility, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been raised in the present matter.

XXIII. INSURANCE

133. Prior to commencing the on-site Work under this AOC, Respondent shall secure, and shall maintain in force for the duration of this AOC and for two (2) years after the completion of all activities required by this AOC, comprehensive general liability insurance and automobile insurance with limits of \$3 million dollars, combined single limit, naming EPA as an additional insured or provide EPA with written assurance of Respondent's capacity to self-insure to these limits. Prior to commencement of the Work under this AOC, and annually thereafter on the anniversary of the Effective Date of this AOC, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy, or other acceptable assurance of coverage. If Respondent demonstrates by evidence satisfactory to EPA that its contractors and subcontractors maintain insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by the contractors and subcontractors or other acceptable assurance of coverage.

134. For the duration of this AOC, Respondent shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of employer's liability insurance and worker's compensation insurance for all persons performing

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the Work on behalf of Respondent, in furtherance of this AOC.

135. At least fourteen (14) days prior to commencing the Work under this AOC, Respondent shall certify to EPA that their contractors and subcontractors have obtained the required insurance.

XXIV. COST ESTIMATES AND FINANCIAL ASSURANCE

136. Cost Estimates. Within thirty (30) days of EPA's approval of the CMI Work Plan, Respondent shall submit to EPA, for review and approval, a detailed written initial estimate, in current dollars, of the cost of hiring a third party to perform the Work described in the EPA approved CMI Work Plan. A third party is a party who: (a) is neither a parent nor a subsidiary of Respondent and (b) does not share a common parent or subsidiary with Respondent. The initial cost estimate must account for the total costs of the work activities described in the EPA approved CMI Work Plan for the entire period of this AOC, including any necessary long term costs, such as operation and maintenance costs, monitoring costs, and institutional controls. The cost estimate must not incorporate any salvage value that may be realized from the sale of wastes, facility structures or equipment, land or other assets associated with the Site.

137. Concurrent with or upon EPA's approval of any work plan for additional work required under Section XXVII (Additional Work), Respondent shall submit revised detailed written estimate(s), in current dollars, of the cost of hiring a third party to perform the Work.

138. Respondent must annually adjust the cost estimate(s) for inflation within thirty (30) days after the close of Respondent's fiscal year until the Work required by this AOC is completed. In addition, Respondent must adjust the cost estimate if EPA determines that any additional work is required, pursuant to Section XXVII (Additional Work), or if any other conditions increase the cost of the Work to be Performed under this Consent Order.

139. Respondent shall submit each cost estimate to EPA for review, pursuant to Section X (EPA Approval of Deliverables).

140. Assurances of Financial Responsibility for Completing the Work. In order to secure the completion of the Work in accordance with this AOC, Respondent shall establish and maintain financial assurance in one of the mechanisms provided by 40 C.F.R. Part 264.

141. Respondent shall submit a draft summary of the financial assurance mechanism it selects to EPA for review pursuant to Section X (EPA Approval of Deliverables) within thirty (30) days after the approval of the CMI Work Plan, concurrently with Respondent's submission of the initial cost estimate required by Paragraph 136. The financial assurance shall be in the form and

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substance satisfactory to EPA, determined in EPA's sole discretion.

142. Within thirty (30) days after EPA's approval of both the initial cost estimate and the draft financial assurance mechanism, whichever date is later, Respondent shall finalize the financial assurance mechanism approved by EPA.

143. Whenever the annually adjusted estimate for the cost of completing the remaining Work exceeds the amount of financial assurance already provided pursuant to this Section, Respondent shall, within thirty (30) days thereafter, increase the amount of the financial assurance to cover such cost increase. In addition, in the event that EPA determines at any time that the financial assurances provided pursuant to this AOC are inadequate (including, without limitation, the Trust Agreement or the Trustee), Respondent shall, within thirty (30) days after receipt of notice of EPA's determination, correct the inadequacy. Furthermore, if at any time EPA notifies Respondent that the anticipated cost of completing the Work has increased, then, within thirty days after receipt of such notification, Respondent shall increase the amount of financial insurance to cover such cost increase.

144. Respondent's inability to post financial assurance for completion of the Work shall in no way excuse performance of any other requirements of this AOC, including, without limitation, Respondent's obligation to complete the Work in strict accordance with the terms of this AOC.

145. Reduction of Amount of Financial Assurance. If Respondent believes that the estimated cost to complete the remaining Work has diminished below the amount covered by the existing financial assurance provided under this AOC, Respondent may, on any anniversary date of the Effective Date of this AOC, or at any other time agreed to by EPA and Respondent, submit a written proposal to EPA to reduce the amount of the financial assurance provided under this Section to the estimated cost of the remaining Work to be performed. The written proposal shall specify, at a minimum, the cost of the remaining Work to be performed and the basis upon which such cost was calculated. The decision whether to approve a proposal to reduce the amount of financial assurance shall be within EPA's sole discretion and EPA shall notify Respondent of its decision regarding such a proposal in writing. Respondent may reduce the amount of the financial assurance only after receiving EPA's written decision and only in accordance with and to the extent permitted by such written decision. In the event of a dispute, Respondent may reduce the amount of the financial assurance required by this Section only in accordance with a final administrative decision resolving such dispute under Section XVIII (Dispute Resolution) of this AOC.

146. Release of Financial Assurance. Respondent may submit a written request to the Division Director of EPA Region 7 requesting that EPA release Respondent from the requirement to maintain financial assurance under this Section at such time as EPA has provided

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written notice, pursuant to Section XXVIII (Termination and Satisfaction) that Respondent has demonstrated that all the terms of this Order have been addressed to the satisfaction of EPA. The Division Director shall notify both Respondent and the Trustee if there is a financial assurance Trust, in writing that Respondent is released from all financial assurance obligations under this AOC.

XXV. INDEMNIFICATION

147. Respondent agrees to indemnify, save and hold harmless the United States, its officials, agents, contractors, employees, and representatives from any and all claims or causes of action: (a) arising from, or on account of, acts or omissions of Respondent, Respondent's directors, officers, employees, agents, successors, assigns, heirs, trustees, receivers, contractors, or consultants in carrying out actions pursuant to this AOC; and (b) for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any persons for performance of the Work on or relating to the Site, including claims on account of construction delays. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including litigation costs arising from or on account of claims made against the United States based on any of the acts or omissions referred to in the preceding sentence.

XXVI. MODIFICATION OF THIS AOC

148. Except for Modification of the Work Plan as provided in Section XI, this AOC may only be modified by the mutual agreement of EPA and Respondent. Any agreed modifications shall: be in writing; be signed by both parties; have as their effective date the date on which they are signed by EPA; and be incorporated into this AOC.

149. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain such formal approval as may be required by this AOC, and to comply with all requirements of this AOC unless it is formally modified. Any deliverables, plans, technical memoranda, reports, specifications, schedules and attachments required by this AOC are, upon approval by EPA, incorporated into and enforceable under this AOC.

XXVII. ADDITIONAL WORK

150. EPA may determine or Respondent may propose that certain tasks are necessary in addition to or in lieu of the tasks included in any EPA-approved Work Plan when such additional work is necessary to meet the objectives set forth in Section I (Introduction). EPA may determine that Respondent shall perform any additional work and EPA will specify, in writing, the basis for its determination that any additional work is necessary. Within five (5) days after

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the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss any additional work. Respondent shall submit for EPA approval a Work Plan for any additional work. Such Work Plan shall be submitted within fourteen (14) days of Respondent's receipt of EPA's determination that any additional work is necessary, or according to an alternative schedule established by EPA. Any additional Work Plans which are required are subject to paragraph 74 EPA Approval of Deliverables. Upon approval of a Work Plan for any additional work, Respondent shall implement the Work Plan for any additional work in accordance with the schedule and provisions contained therein. The Work Plan for any additional work shall be incorporated by reference into this AOC.

XXVIII. TERMINATION AND SATISFACTION

151. The provisions of this AOC shall be deemed terminated and satisfied by Respondent upon written notice from EPA that Respondent has demonstrated that all of the terms of this AOC, including any additional work as may be performed pursuant to Section XXVII (Additional Work) and any stipulated penalties demanded by EPA under Section XIX (Penalties), have been addressed to the satisfaction of EPA. Termination of this AOC shall not terminate Respondent's obligation to comply with: Sections XV (Sampling, Access and Data Availability); XVII (Record Retention); XXI (Reservation of Rights); and XXV (Indemnification) of this AOC, and maintain institutional and engineering controls.

XXIX. PUBLIC COMMENT ON THIS AOC

152. EPA shall provide public notice, opportunity for a public meeting and a reasonable opportunity for public comment on the proposed settlement. After consideration of any comments submitted during a public comment period of not less than thirty (30) days (which EPA may extend), EPA may withhold consent or seek to amend all or part of this AOC if EPA determines that comments received disclose facts or considerations which indicate that this AOC is inappropriate, improper, or inadequate.

XXX. SEVERABILITY

153. If a court issues an order that invalidates any provision of this AOC or finds that Respondent has sufficient cause not to comply with one or more provisions of this AOC, Respondent shall remain bound to comply with all provisions of this AOC not invalidated or determined to be subject to a sufficient cause defense by the court's order.

XXXI. EFFECTIVE DATE

154. This AOC shall be effective when EPA signs this AOC after the public comment period

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as specified in Section XXIX (Public Comment On This AOC) above. Within three (3) business days of signing this AOC, EPA will provide Respondent with a copy of the signature page of this AOC signed by the Division Director. The undersigned representative of Respondent certifies that it is fully authorized to enter into the terms and conditions of this AOC and to bind the party it represents to this document. Respondent agrees not to contest the validity or terms of this AOC, or the procedures underlying or relating to it in any action brought by the United States, including EPA, to enforce its terms or seek penalties for its violation. Respondent retains its right to assert claims against any third parties with respect to this Site.

155. Respondent's obligation to perform the Work will begin on the Effective Date of this AOC.

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MARATHON OIL COMPANY

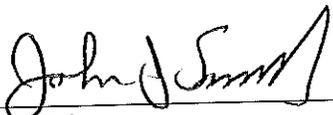
By: Bradley D. Hutchison
Signature

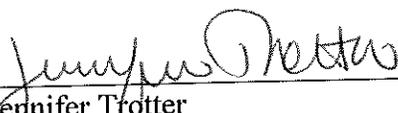
BRADLEY D. HUTCHISON
Print Name

General Manager of Upstream HSES
Title

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U.S. ENVIRONMENTAL PROTECTION AGENCY

By: 
 Becky Weber
Director
Air and Waste Management Division

By: 
Jennifer Trotter
Attorney-Advisor
Office of Regional Counsel

Effective Date: September 28, 2010

**CORRECTIVE MEASURES STUDY (CMS)
Statement of Work**

PURPOSE

Marathon Oil shall conduct a Corrective Measures Study (CMS) that identifies and compares alternative potential remedies and recommends a preferred remedy(ies) to address the contamination at and/or originating from Marathon Oil's Facility. The CMS shall provide sufficient information to support EPA's selection of an appropriate remedy and to support the implementation of corrective measures. This process shall conform to EPA's *RCRA Corrective Action Plan*, EPA/520-R-94-004, OSWER Directive 9902.3-2A, May 1994, and other applicable EPA guidance.

SCOPE

The CMS shall consist of the following tasks:

TASK I: CMS WORK PLAN

TASK II: CMS REPORT

TASK III: PROGRESS REPORTS

TASK I: CMS WORK PLAN

Within the timeframes specified in the Order, the Marathon Oil shall prepare a CMS Work Plan. EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order. The CMS Work Plan shall include the following elements:

1. A site-specific description of the overall purpose of the Corrective Measure Study;
2. A description of the corrective measure objectives, including proposed target media cleanup standards (e.g., promulgated federal and state standards, risk derived standards) and points of compliance or a description of how a risk assessment will be performed (e.g., guidance documents);
3. A description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied (including Institutional Controls);
4. A description of the general approach to investigating and evaluating potential corrective measures;

5. A detailed description of any proposed pilot, laboratory and/or bench scale treatability studies and/or pilot tests;
6. A proposed outline for the CMS Report including a description of how information will be presented; and
7. A schedule for completion of the CMS.

TASK II: CMS REPORT

Within the time frames specified in the Order, Marathon Oil shall submit to EPA for approval a CMS Report. The CMS report shall address, without limitation, all items set forth in this section, below. EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order. Irrespective of an approved CMS Work Plan, EPA may require Marathon Oil to collect, present and/or analyze additional information beyond the scope of the approved CMS Work Plan and the following list to accomplish the purpose and objectives of the CMS. The following information must be included in the CMS Report:

1. **Statement of Purpose** - The CMS Report shall describe the purpose of the document and provide a summary description of the project;
2. **Description of Current Conditions** - The CMS Report shall include a brief discussion of any new information that has been developed since the RFI, particularly where that information could affect the evaluation and selection of the corrective measures alternative(s).
3. **Corrective Action Objectives** - The CMS Report shall describe and propose Marathon Oil's corrective action objectives. Specifically, Marathon Oil shall propose applicable media cleanup standards for each medium where Facility-related contamination poses an unacceptable risk to human health and the environment. The CMS Report shall explain how these objectives are protective of human health and the environment and are consistent with EPA guidance and the requirements of applicable federal statutes. Final corrective action objectives will be determined by the EPA when the final corrective action remedy is selected.
4. **Potential Receptors** - The CMS Report shall describe the human populations and environmental systems that currently or potentially are at risk of contaminant exposure from the Facility.
5. **Identification, Screening, and Development of Corrective Measure Alternatives**

- a. The CMS Report shall list and describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives proposed by Marathon Oil. The CMS Report shall include a table that summarizes the available technologies; and
- b. Screening of Technologies - the CMS Report shall present a screening of corrective measures technologies to demonstrate why certain corrective measures technologies may not prove feasible to implement given existing waste and site-specific conditions. This screening process must use consistent, defensible, and quantitative evaluation criteria to the extent possible.

6. Corrective Measure Development

- a. The CMS Report shall assemble the technologies that pass the screening step into specific alternatives that have the potential to meet the corrective action objectives for all contaminated environmental media; and
- b. Each alternative proposed in the CMS Report shall consist of an individual technology or a combination of technologies used in parallel or in sequence (i.e., a treatment train). Different alternatives may be considered for separate areas of the Facility. The developed alternatives shall be carried forward for evaluation using the EPA's four Screening Criteria and five Balancing Criteria.

7. Screening Criteria - For each remedy which warrants a more detailed evaluation, the CMS Report shall provide detailed documentation of how the potential remedy will comply with each of the Screening Criteria listed below:

- a. Protect human health and the environment;
- b. Attain media cleanup standards set by the EPA;
- c. Control the source(s) of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment; and
- d. Comply with any applicable standards for management of wastes.

Any corrective measure alternative proposed by Marathon Oil in the CMS Report must satisfy the four Screening Criteria in order to be carried forward for evaluation using the Balancing Criteria. In evaluating the selected corrective measure alternative or alternatives, the Marathon Oil shall prepare and submit information that documents that the specific remedy will meet the standards listed above. A detailed explanation of the Screening Criteria is set forth in the *RCRA Corrective Action Plan* guidance.

7. **Balancing Criteria** - Any remedy proposed by Marathon Oil which meets the four Screening Criteria shall also be evaluated according to the five Balancing Criteria. These criteria represent a combination of technical measures and management controls for addressing the environmental problems at the Facility. The five criteria are:
- a. Long-term reliability and effectiveness;
 - b. Reduction in the toxicity, mobility or volume of wastes;
 - c. Short-term effectiveness;
 - d. Implementability; and
 - e. Cost.

The CMS Report shall discuss and provide information on these criteria in the evaluation of corrective action alternatives. A detailed explanation of the Balancing Criteria is set forth in the *RCRA Corrective Action Plan*.

9. **If the CMS Report proposes corrective measures that leave contamination on site at a level that does not allow for unrestricted use and unlimited exposure**, Marathon Oil shall include as a component of such corrective measures a plan to implement institutional controls to prevent unacceptable exposures to human health and the environment. Such a plan shall be consistent with EPA guidance including but not limited to "*Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*," EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000 and the draft "*Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups*" February 2003.

10. **Recommendation by Marathon Oil for a Final Corrective Measure Alternative** – In the CMS Report, Marathon Oil shall recommend a preferred remedial alternative for consideration by EPA. Such a recommendation should include a description and supporting rationale for the proposed remedy, consistent with the remedial standards and decision factors discussed above. The implementing agency still retains the role of remedy selection.
11. **Public Involvement Plan** – Additional public involvement activities may be necessary, based on facility-specific circumstances.

Task III: PROGRESS REPORTS

The Marathon Oil will, at a minimum, provide the implementing agency with signed Quarterly progress reports.

These progress reports must contain the following elements, at a minimum:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of all findings in the reporting period, including results of any pilot studies;
3. Summaries of all changes made in the CMS during the reporting period;
4. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;
5. Summaries of all contacts made regarding access to property;
6. Summaries of all problems or potential problems encountered during the reporting period;
7. Actions being taken to rectify problems;
8. Changes in relevant personnel during the reporting period;
9. Projected work for the next reporting period; and
10. Copies of daily reports; inspection reports, laboratory/monitoring data, etc.

**CORRECTIVE MEASURES IMPLEMENTATION (CMI)
Statement of Work**

PURPOSE

Marathon Oil shall perform the Corrective Measures Implementation (CMI) that implements the remedy selected by EPA to prevent, mitigate, and/or remediate any migration or release of solid and/or hazardous wastes and/or hazardous constituents at, and/or from, the Facility. The purpose of the CMI program is to design, construct, operate, maintain and monitor the performance of the corrective measure(s) selected in the Final Decision Document and Response to Comments (FDDRTC). Corrective measures are intended to protect human health and the environment from releases from the facility. This process shall conform to EPA's *RCRA Corrective Action Plan*, EPA/520-R-94-004, OSWER Directive 9902.3-2A, May 1994, and all other applicable EPA guidance.

The CMI shall consist of the design, construction, operation, maintenance and monitoring of the corrective measures(s) selected by EPA for the Facility, and as specified in the CMI Work Plan.

SCOPE

The CMI shall consist of the following.

TASK I: CMI Work Plan

ATTACHMENT A: Updated Quality Assurance Project Plan, and Sampling and Analysis Plan

ATTACHMENT B: Updated Public Involvement Plan (PIP)

ATTACHMENT C: Operation and Maintenance (O&M) Plan

TASK II: Corrective Measures Construction Completion Report

TASK III Remedy Performance 5-Year Review

TASK IV: Corrective Measures Completion Report

TASK V: Progress Reports.

Marathon Oil may be required to conduct additional studies beyond what is discussed in the SOW in order to support the CMI program.

TASK I: CMI WORK PLAN

Within the timeframe specified in the Order, Marathon Oil shall submit a CMI Work Plan to EPA. The required CMI Work Plan shall specify the work required for the design, construction, implementation, operation, maintenance, and continued performance monitoring of EPA's selected final corrective action(s) for the facility described in the FDDRTC. EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order. The CMI Work Plan shall include, at a minimum, the following elements:

1. **Introduction/Purpose:** The CMI Work Plan shall contain a description of the purpose of the document and a summary description of the project;
2. **Corrective action objectives** including media cleanup standards;
3. **Description of the final corrective measure(s)** selected by EPA including institutional controls, if any;
4. **Conceptual model of contaminant migration;**
5. **Design Criteria** – Specify performance requirements for the overall corrective measure(s) and for each major component. Marathon Oil must select equipment that meets the performance requirements. Long-lead performance considerations should be included;
6. **Design Basis** – Discuss the process and methods for designing all major components of the corrective measure. At a minimum the following must be addressed:
 - a. Conceptual process/Schematic diagrams;
 - b. Site plan showing preliminary plan layout and/or treatment area.
7. **Startup Procedures**, including all applicable system startup procedures and operational testing;
8. **Design and implementation considerations to implement the selected remedy**, to include, but not be limited to:
 - a. Anticipated technical problems;
 - b. Additional engineering data that may be required;
 - c. A description of any permits and regulatory requirements;

and

- d. Access, easements and right-of-way.
9. **Waste Management Practices** – Describe the wastes generated by the construction of the corrective measure(s) and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed;
10. **Long-term monitoring requirements;**
11. **Cost estimates, including the capital and O&M costs for implementing the entire corrective action;**
12. **Corrective Measures Completion Criteria** - The CMI Work Plan shall propose the process and criteria for determining when the implemented corrective measures have achieved the corrective action objectives. The CMI Work Plan shall also describe the process and criteria for determining when maintenance and monitoring may cease; and
13. **Project Schedule** - The CMI Work Plan shall also specify a schedule for key elements of the CMI process including bidding and construction process, and for the initiation of all major corrective action construction tasks and milestones.
14. **Permitting**-Marathon Oil shall identify and obtain all federal, state, interstate, regional and local permits and approvals required for the implementation of the Corrective Measures required by the AOC and this SOW and for the implementation of any institutional controls required by the AOC. Marathon Oil shall also identify all agreements or other arrangements with adjoining landowners, if any, known by Marathon Oil to be necessary for the implementation of the Corrective Measures, including, but not limited to, site access and easement agreements. Marathon Oil shall include a schedule indicating the time needed to obtain all such approvals and permits and to enter into such agreements and arrangements. This schedule may be integrated with the design/implementation schedule items.

ATTACHMENT A : UPDATED/REVISED QUALITY ASSURANCE PROJECT PLAN (QAPP) AND SAMPLING AND ANALYSIS PLAN (SAP)

Marathon Oil shall submit updates of the referenced plans, either as amendments to existing documents, or stand alone documents. The updated/revise Plans shall be revised as appropriate to address the requirements of implementing the final corrective

actions for the Facility. The EPA will review and/or approve and/or modify all updates to the QAPP in accordance with Section X and XI of the Order.

ATTACHMENT B: UPDATED PUBLIC INVOLVEMENT PLAN (PIP)

Marathon Oil shall revise the PIP to include any material changes in the level of concern or information needs of the community during design and construction activities.

EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order.

ATTACHMENT C: OPERATION AND MAINTENANCE (O&M) PLAN

Marathon Oil shall submit to EPA an Operations and Maintenance (O&M) Plan that outlines procedures for performing operations, long-term maintenance and monitoring of the final corrective measure(s) required by the FDDRTC. The O&M Work Plan shall address all elements set forth below, including but not limited to, Project Management, Data Collection, Waste Management Procedures and Contingency Procedures. EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order. The O&M Plan shall, at a minimum, include the following elements:

1. **Project Management** - The O&M Plan shall describe the management approach including levels of personnel authority and responsibility (including an organizational chart), lines of communication and the qualifications of key personnel who will operate and maintain the corrective action (including contractor personnel);
2. **System description** - The O&M Plan shall describe the corrective action components and identify significant equipment, as applicable to each selected corrective action alternative. Provide schematics or process diagrams to illustrate system design and operation;
3. **Personnel Training** - The O&M Plan shall describe the training process for O&M personnel, as applicable. Marathon Oil shall prepare, and include the technical specifications governing the operation and on-going maintenance of contaminant mitigation systems, and the support requirements for the following:
 - a. Appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up and operation of contaminant mitigation systems;
 - b. Training covering appropriate operational procedures once the start-up has been successfully accomplished;

4. **Start-Up Procedures** - The O&M Plan shall describe all applicable system start-up procedures including any operational testing;
5. **O&M Procedures** - The O&M Plan shall describe all normal operation and maintenance procedures including:
 - a. A description of tasks for operation;
 - b. A description of tasks for maintenance;
 - c. A description of prescribed treatment or operation conditions; and
 - d. A schedule showing frequency of each O&M task.
6. **Data Management and Documentation Requirements** - The O&M Plan shall specify that Marathon Oil shall collect and maintain the following information:
 - a. Progress report information;
 - b. Monitoring and laboratory data;
 - c. Records of operating costs; and
 - d. Personnel, maintenance and inspections.
7. **Replacement Schedule** - the O&M Plan shall specify a replacement schedule for equipment and installed components;
8. **Waste Management Practices** - The O&M Plan shall describe any solid wastes/hazardous wastes which may be generated by the operation of the corrective measures components and describe how they will be managed;
9. **Contingency Procedures** - The O&M Plan shall describe, as applicable, the following types of contingency procedures necessary to ensure system operation in a manner protective of human health and the environment:
 - a. Procedures to address system breakdowns and operational problems including a list of redundant and emergency back-up equipment and procedures;

- b. Alternative procedures to be implemented if the corrective measure systems suffer complete failure. The alternative procedures must be able to achieve the performance standards for the corrective measures until system operations are restored;
- c. The O&M Plan shall specify that, in the event of a major breakdown and/or the failure of the corrective measures, Marathon Oil shall notify EPA within 24 hours of the event; and
- d. The O&M Plan shall specify the procedures to be implemented in the event that the corrective measure(s) are experiencing major operational problems, are not performing to design specifications, and/or will not achieve the corrective action objectives.

TASK II: CORRECTIVE MEASURES CONSTRUCTION COMPLETION REPORT (CMCCR)

Within the timeframes specified in the Order, Marathon Oil shall submit a Corrective Measures Construction Completion Report. EPA will review and approve or modify this submittal in accordance with Section X and XI of the Order. The CMCCR shall include at a minimum, the following elements:

- 1. A statement of the purpose of the Report;
- 2. A synopsis of the corrective measures, design criteria, and a certification that the corrective measure was constructed and implemented in accordance with the approved CMI Work Plan;
- 3. An explanation and description of any modifications to the approved CMI Work Plan and design specifications, and why such modifications were necessary and appropriate;
- 4. Copies of any sampling/test results for operational testing and/or monitoring that documents how initial operation of the corrective measure compares to design criteria;
- 5. A summary of significant activities that occurred during the implementation/construction, including a discussion of any problems encountered and how such problems were addressed;
- 6. A summary of all inspection findings (including copies of inspection reports, documents and appendices); and

7. Copies of as-built drawings and photographs.

TASK III: REMEDY PERFORMANCE FIVE YEAR REVIEW

Beginning on the fifth (5th) anniversary of EPA's approval of Marathons Remedy Construction Completion Report, and every five (5) years thereafter until the AOC is terminated pursuant to Section XXVIII of the order Respondent shall submit to EPA for review a 5-Year Remedy Performance Evaluation Report evaluating the remedy's effectiveness and performance. This evaluation shall be consistent with the *CRECLA Comprehensive Five-Year Review Guidance, OSWER9355.7-03B-P*, and any subsequent revisions or additions, and shall include the following

1. Horizontal capture zone analysis prepared in accordance with *Capture Zone How-To Guide for Groundwater Pump and Treat Systems* if a pump and treat system is a component of the selected remedy;
2. Effectiveness of corrective measures in protecting human health and the environment as planned in the Statement of Basis;
3. Effectiveness of ECs and ICs in protecting human health and the environment as planned in the Statement of Basis;
4. Results of sampling and analysis to determine the effectiveness and performance of the corrective measures;
5. Progress toward attaining site-specific media cleanup goals, an estimate of the time remaining to attain those goals, and identification of limiting factors in attaining those goals;
6. Any changed circumstances that render the corrective measures, including ECs and ICs ineffective;
7. Possible modifications to the corrective measures to provide necessary protection;
8. Any other reporting requirements included in the EPA approved CMI Work Plan.

Based upon EPA's review of the 5-Year Remedy Performance Evaluation Report, EPA may require Respondent to conduct additional investigations and/or work in order to modify the existing remedy or to select a new remedy or remedies. If action is needed to protect human health or the environment from harm or potential harm from contamination or to prevent or minimize the further spread of contamination while long-term remedies are pursued, EPA may require Respondent to implement Interim Measures Pursuant to this Order.

TASK IV: CORRECTIVE MEASURES COMPLETION REPORT (CMCR)

Within the timeframes specified in the Order and upon satisfaction of the EPA approved completion criteria, Marathon Oil shall submit to EPA a Corrective Measures Completion Report. EPA will review and approve or modify this submittal in accordance with Section X of the Order. The CMCR shall fully document how the corrective action objectives and corrective measures completion criteria have been satisfied, and shall justify why the corrective measure and/or monitoring may cease. The CMCR shall, at a minimum, include the following elements:

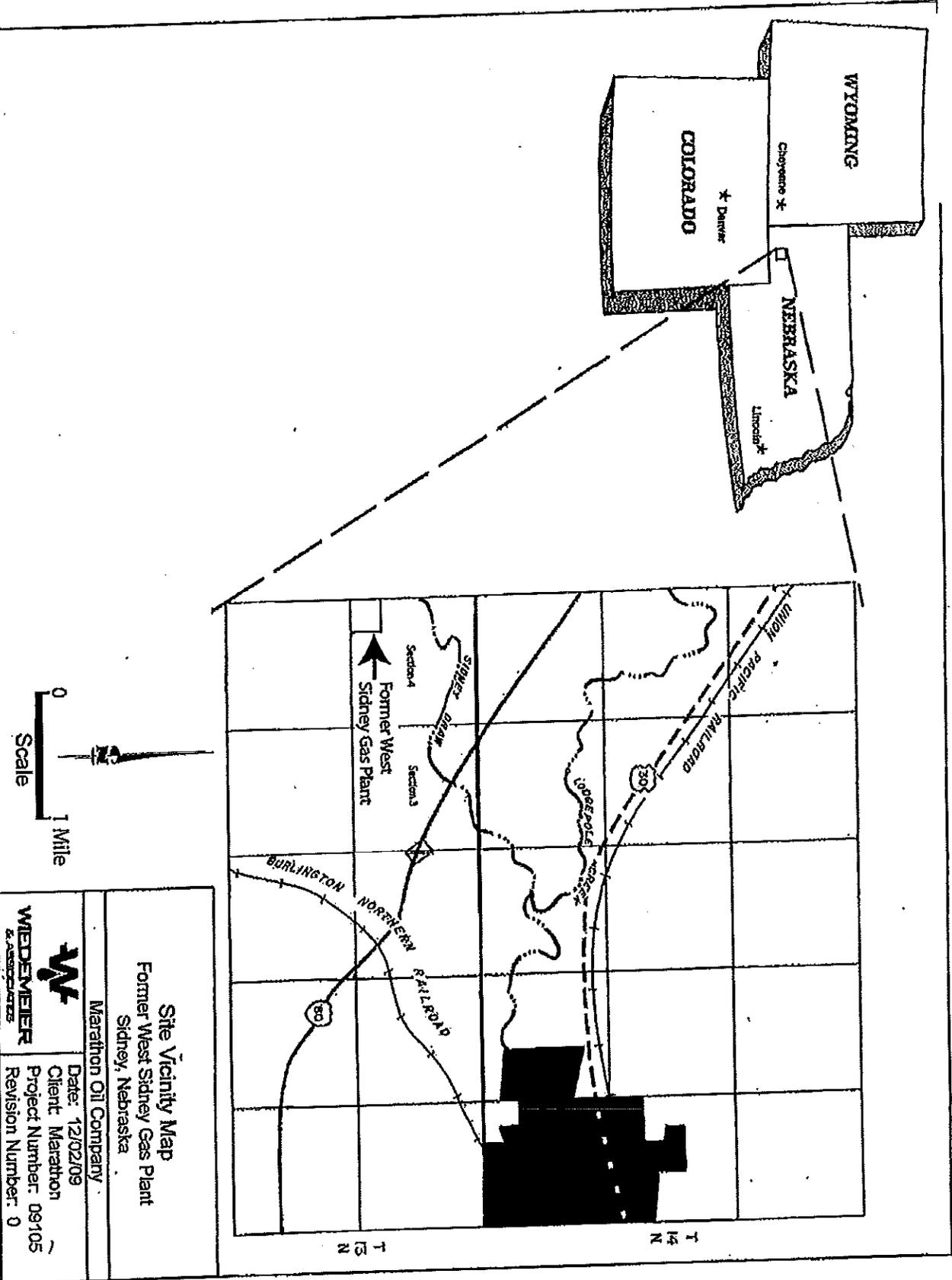
1. A synopsis of the corrective measures;
2. Corrective Measures Completion Criteria - the CMCR shall include the process and criteria used to determine, and recommend, that the corrective measures maintenance and monitoring may cease;
3. A demonstration that the corrective action objectives and corrective measure completion criteria have been met. The CMCR shall include results of tests and/or monitoring that documents how operation of the corrective measures compares to, and satisfies, the corrective action objectives and completion criteria;
4. A summary of work accomplishments (e.g. performance levels achieved, total hours of operation, total volume treated and/or excavated volumes of media, nature and volume of wastes generated, etc.);
5. A summary of significant activities that occurred during operation of the corrective measures, including a discussion of any problems encountered and how such problems were addressed;
6. A summary of inspection findings (including copies of key inspection documents in appendices); and
7. A summary of total O & M costs.

TASK V: PROGRESS REPORTS

The Marathon Oil will, at a minimum, provide the implementing agency with signed Quarterly progress reports.

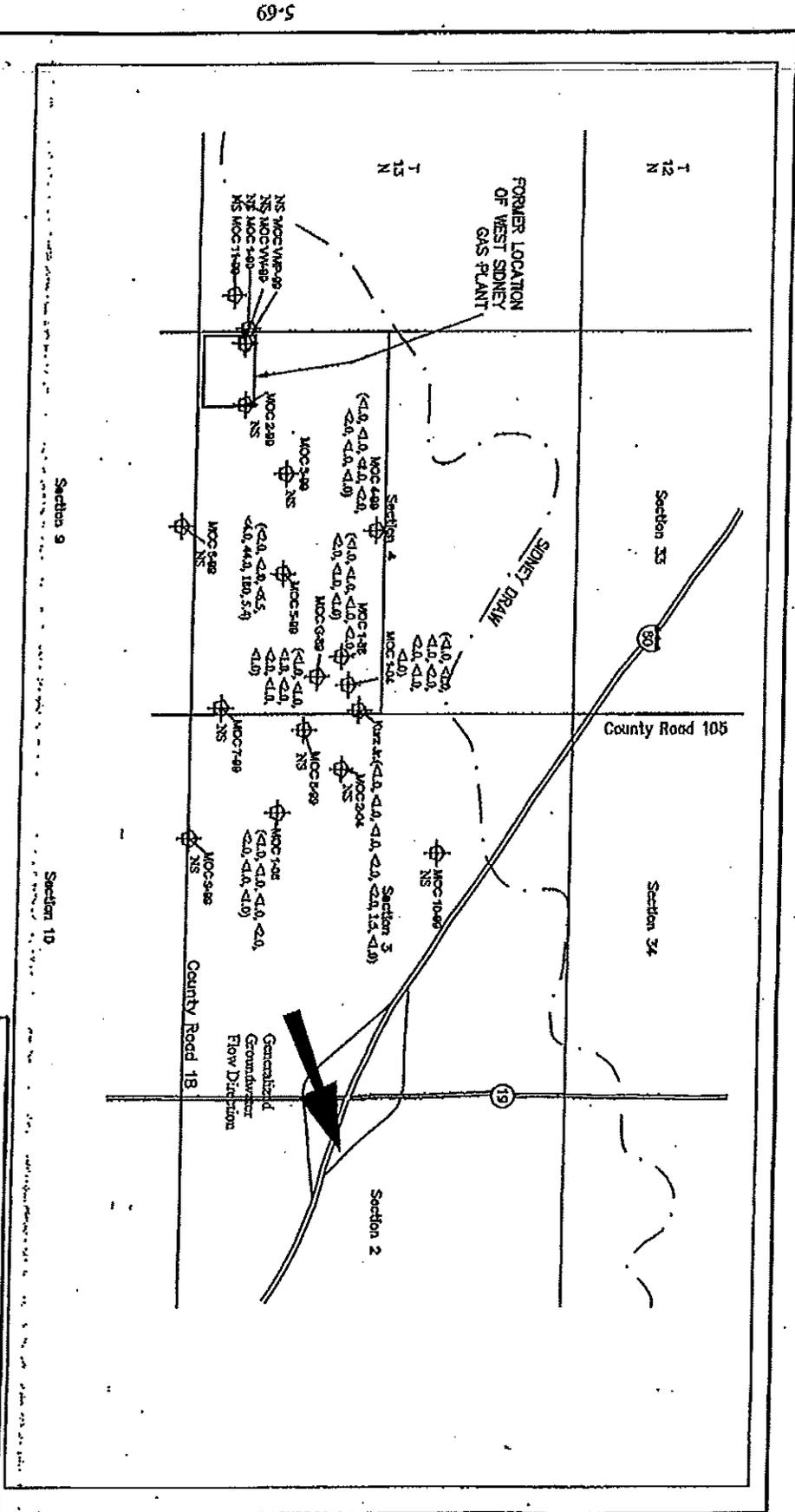
These progress reports must contain the following elements, at a minimum:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of all findings in the reporting period, including results of any pilot studies;
3. Summaries of all changes made in the CMS during the reporting period;
4. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;
5. Summaries of all contacts made regarding access to property;
6. Summaries of all problems encountered during the reporting period;
7. Actions being taken to rectify problems;
8. Changes in relevant personnel during the reporting period;
9. Projected work for the next reporting period; and
10. Copies of daily reports; inspection reports, laboratory/monitoring data, etc.



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<p>Site Vicinity Map Former West Sidney Gas Plant Sidney, Nebraska</p>	
<p>Marathon Oil Company</p>	
 <p>WIEDEMEIER & ASSOCIATES</p>	<p>Date: 12/02/09 Client: Marathon Project Number: 09105 Revision Number: 0</p>



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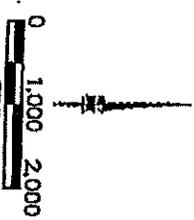
LEGEND

⊕ Existing Monitoring Wells

(5.0, <2.0, 45.1, 98.5, NM, 4.2, 6.0) = Concentration of Benzene, Toluene, Ethylbenzene, Xylene, 1,2,3-TMB, 1,2,4-TMB, and 1,3,5-TMB, respectively in ug/L)

NS = Not Sampled
 NM = Not Measured

▭ Extent of Marathon-Owned Property

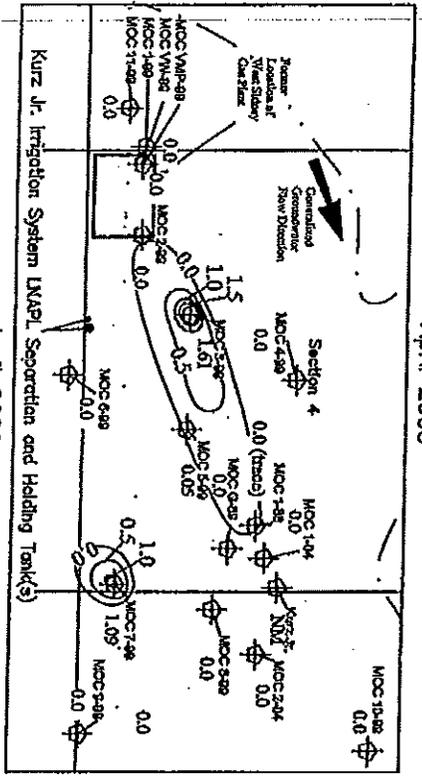


Benzene, Toluene, Ethylbenzene, Xylene, and Trimethylbenzene Concentrations in Groundwater
 April 2009
 Former West Sidney Gas Plant
 Sidney, Nebraska
 Marathon Oil Company

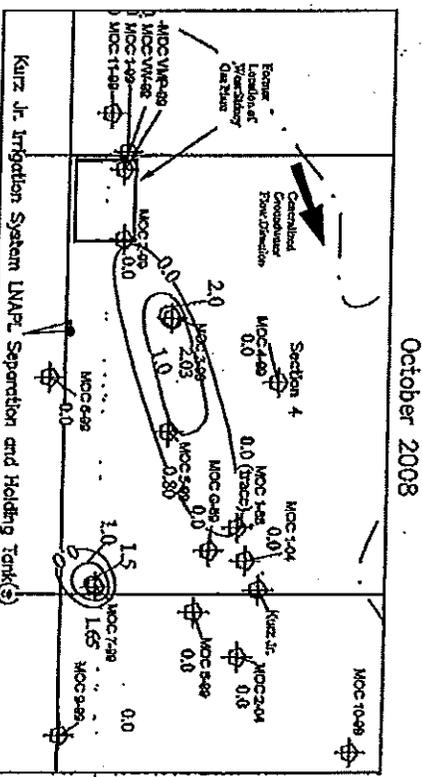
WIEDEMEIER
 & ASSOCIATES

Date: 1/23/10
 Client: Marathon
 Project Number: 09105
 Revision Number: 0

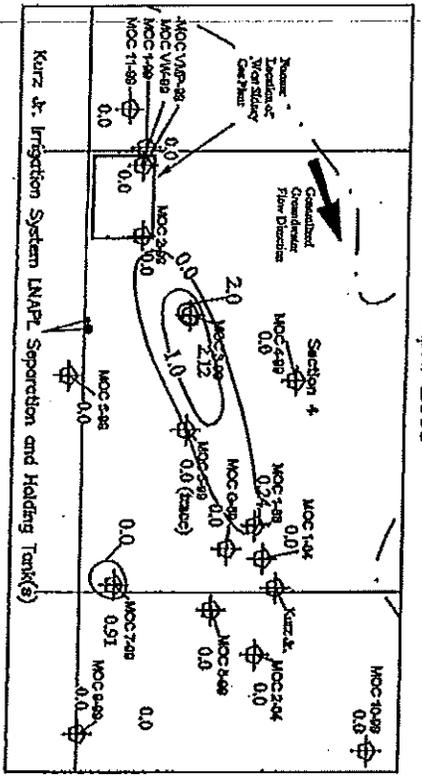
Attachment 5



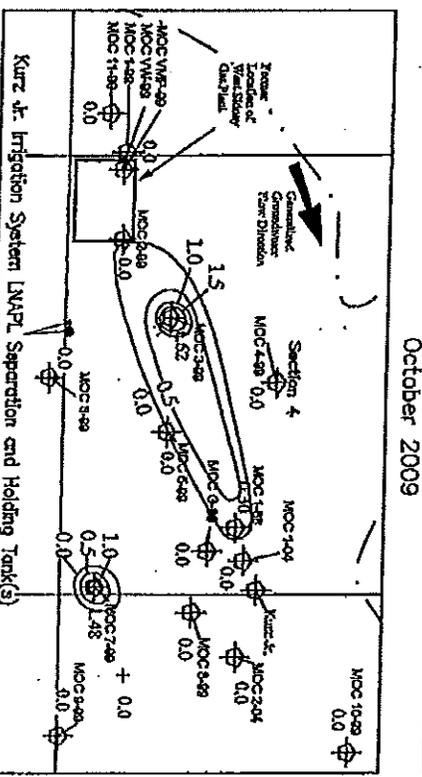
April 2008



April 2009



October 2008



October 2009

LEGEND

Existing Monitoring Well and Associated LNAFL Thickness (feet) (see Table 4.2 for Existing Monitoring Well LNAFL Gauging Data)

Line of Equal LNAFL Thickness (feet)

Apparent LNAFL Thickness Map (feet)
 April 2008, October 2008, April 2009, and October 2009
 Former West Sidney Gas Plant
 Sidney, Nebraska

Marathon Oil Company

Date: 11/27/09
 Client: Marathon
 Project Number: 06105
 Revision Number: 2

WIEDENBERGER & ASSOCIATES

IN THE MATTER OF West Sidney Gas Plant, Respondent
Docket No. RCRA-07-2010-0022

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing Administrative Order on Consent was sent this day in the following manner to the addressees:

Copy hand delivered to
Attorney for Complainant:

Jennifer Trotter
Assistant Regional Counsel
Region 7
United States Environmental Protection Agency
901 N. 5th Street
Kansas City, Kansas 66101

Copy by Certified Mail Return Receipt to:

Michele Malloy
Marathon Oil Company
P.O. Box 4813
Suite 2531
Houston, Texas 77210-4813

Dated: 9/28/10


Kathy Robinson
Hearing Clerk, Region 7