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McDonald, Jeffrey

From: Lecouris, Alison B <lecouris@illinois.edu>
Sent: Thursday, July 17, 2014 2:18 PM
To: McDonald, Jeffrey
Cc: Greenhagen, Andrew
Subject: ISGS Well Data Retrieval - RE: ISGS well data in West Central Illinois
Attachments: spreadsh_oil_web.pdf; License_agreement_20081111.pdf; status_codes.pdf; fm_codes.pdf; ISGShead.xlsx

Categories: Follow-up

There are a total of 18,219 well header records in our database for these 8 counties.

I am attaching our license agreement for digital data sales and a pdf document that describes the format of the data file. Please review the license agreement to make sure your use of our data is appropriate.

Disclaimer:
The information in all computer generated datasets is based on well data supplied to the Illinois State Geological Survey (ISGS) and is not field verified. The ISGS does not guarantee the validity, accuracy, and completeness of this data.

Alison

Alison B. Lecouris, OCA - Oracle Database Administrator
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From: McDonald, Jeffrey [mailto:mcdonald.jeffrey@epa.gov]
Sent: Thursday, July 17, 2014 11:53 AM
To: Lecouris, Alison B
Cc: Greenhagen, Andrew
Subject: ISGS well data in West Central Illinois

Allison,

Thanks again. Here are the counties we are looking for. The header information as you described should let us pin down the location, depth, well type and well status (among other things) that will help us greatly.

Jeff

- Counties:
Morgan
Sangamon
Greene
Macoupin
Scott
Cass
Mason

Menard

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Digital Well Database Output Format for Oil & Gas Wells

Header Information: This list contains location and identification information that is usually entered from the original permit. Other items included are entered from many sources including the completion report, plugging affidavit and scout tickets. Currently there are over 195,000 Oil & Gas well records in this ISGS database.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS Consists of "12" - state code /three digit county code/ 5 digit unique number/2 digit re-drill code	CHAR(12)
LATITUDE	Latitude, decimal degrees, NAD83	NUMBER(9,6)
LONGITUDE	Longitude, decimal degrees, NAD83	NUMBER(9,6)
TDFORMATION	Total depth formation	CHAR(8)
PRODFORM	Producing formation	CHAR(8)
TOTAL_DEPTH	Total depth	NUMBER(5)
SECTION	Well location - section	NUMBER(2)
TWP	Well location - township	NUMBER(2)
TDIR	Well location - township direction	CHAR(1)
RNG	Well location - range	NUMBER(2)
RDIR	Well location - range direction	CHAR(1)
NSFOOT	footage N or S from corner or line	NUMBER(5)
NSDIR	Direction (N or S) for NSFOOT	CHAR(1)
EWFOOT	footage E or W from corner or line	NUMBER(5)
EWDIR	Direction (E or W) for EWFOOT	CHAR(1)
CORNER	Corner for footage directions, blank if footage from a line	CHAR(2)
QUARTERS	if location subdivided into quarters	CHAR(8)
ELEVATION	Elevation	NUMBER(5)
ELEVREF	Elevation Reference: CF - Casing Flange CO - Elevation from the company DF - Derrick Floor DM - Digital Elevation Model DR - DRG ES - Estimated GL - Ground level GP - GPS KB - Kelly Bushing LD - LIDAR LS - Laughlin OV - Orbit Valve PT - Plane table RB - Rotary Bushing RT - Rotary table TM - Topographic map	CHAR(2)

Item Name	Item Description	Item Format
COMP_DATE	Completion date 'YYYYMMDD'	DATE
STATUS	Well status code	CHAR(6)
FARM_NAME	Well name	CHAR(35)
FARM_NUM	Well number	CHAR(10)
COMPANY_NAME	Company name	CHAR(35)
PERMIT_NUMBER	State assigned number - NOT unique	CHAR(7)
PERMIT_DATE	Permit issue date 'YYYYMMDD'	DATE
PLUG_DATE	Date of well plugging 'YYYYMMDD'	DATE
FIELD_CODE	Field code number	NUMBER(4)
MERIDIAN	Meridian 2, 3 or 4	NUMBER(1)
IPBO	Initial Production - Barrels of Oil	NUMBER(4)
IPBW	Initial Production - Barrels of water	NUMBER(4)
IPMCF	Initial Production of gas in thousands of cubic feet	NUMBER(7)
IPMETHOD	Initial Production method: F - Flowing I - shutIn J - Junked P - Pumping S - Show W - Waterflood	CHAR(1)
DST	The number of drill stem tests run	NUMBER(2)
SPUDDATE	Spud Date 'YYYYMMDD'	DATE
INJBW	Amount of water injected per day.	NUMBER(4)
INJMCF	Amount of gas injected per day.	NUMBER(7)
INJECTION_PSI	Injection pressure.	NUMBER(4)

Formation Tops Information: This list contains formation tops information that is usually entered from the scout tickets. Many tops are added from Geologist picks from log information. Currently there are over 116,000 wells in the ISGS database with formation top information.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS Consists of "12" - state code /three digit county code/ 5 digit unique number/2 digit re-drill code	CHAR(12)
LATITUDE	Latitude, decimal degrees, NAD83	NUMBER(9,6)
LONGITUDE	Longitude, decimal degrees, NAD83	NUMBER(9,6)
FMTOP	top of formation/unit	NUMBER(5)
FMBASE	base of formation/unit	NUMBER(5)
FORMATION_CODE	formation code top/unit	CHAR(8)
FMNOTES	additional notes about this formation	CHAR(100)

Pay Zone Information:

This list contains pay zone information that is usually entered from the scout tickets and completion reports. Currently there are over 92,000 API numbers in the ISGS database with pay zone information.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS Consists of "12" - state code /three digit county code/ 5 digit unique number/2 digit re-drill code	CHAR(12)
LATITUDE	Latitude, decimal degrees, NAD83	NUMBER(9,6)
LONGITUDE	Longitude, decimal degrees, NAD83	NUMBER(9,6)
PAYTOP	top of pay zone/unit	NUMBER(5)
PAYBASE	base of pay zone/unit	NUMBER(5)
PAYSTRAT	formation code top/unit	CHAR(8)
NEWPAY	new pay classification - abandoned, deeper, injection, new, first	VARCHAR2(1)

Treatments: This table contains well treatment information. This table currently contains 34,277 records.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS. Consists of "12" - state code for Illinois /three digit county code/five digit unique number/two digit re-drill code. <Foreign Index Key>	CHAR(12)
LATITUDE	Latitude, decimal degrees, NAD83	NUMBER(9,6)
LONGITUDE	Longitude, decimal degrees, NAD83	NUMBER(9,6)
TREATMENT_TYPE	Type of treatment: A - Acidized D - Drill StemTest (DST) F - Fractured N - Notes only P - Perforated Q - Squeezed S - Shots	CHAR(1)
TREATMENT_NUM	Treatment number.	NUMBER(3)
TREATMENT_TOP	Top of treatment interval	NUMBER(5)
TREATMENT_BOTTOM	Bottom of treatment interval	NUMBER(5)
TREATMENT_INFO	Additional information about the treatment	CHAR(240)

Samples: This table contains the information for samples and cores stored at the ISGS Annex. This table currently contains 83,082 records.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS. Consists of "12" - state code for Illinois /three digit county code/five digit unique number/two digit re-drill code. <Foreign Index Key>	CHAR(12)

Item Name	Item Description	Item Format
LATITUDE	Latitude, decimal degrees, NAD83	NUMBER(9,6)
LONGITUDE	Longitude, decimal degrees, NAD83	NUMBER(9,6)
SAMPLE_TYPE	Type of sample: C - Core S - Sample set F - film of electric log	CHAR(1)
SAMPLE_NUMBER	Sample number. If this is a sample_type of 'F' then this number represents the box number where the film is stored at the ISGS Annex.	NUMBER(5)
SAMPLE_TOP	Top of sample interval	NUMBER(7)
SAMPLE_BOTTOM	Bottom of sample interval	NUMBER(7)
SAMPLE_FORM	Formation code of sample <Foreign Index Key> see FORMATIONS table.	CHAR(8)
SAMPLE_SIZE	Size of sample (biscuits, chips)	CHAR(10)
SAMPLE_STUDY	Name of person(s) who studied the samples	CHAR(20)
SS_DATE	Date samples were studied (YYYYMMDD)	DATE
SAMPLE_REC'D	Date sample processed (YYYYMMDD)	DATE
AMOUNT	Amount of samples or core	CHAR(20)
ANNEX_LOC	Location of sample/core	CHAR(50)
NUM_BOXES	Number and type of boxes	CHAR(20)
COMMENTS	Additional comments	CHAR(500)

Casing: Well casing information as it appears on the Well Completion Report. This table was created for Oil and Gas well summary sheet generation. This table currently contains 59,320 records for 26,308 wells.

Item Name	Item Description	Item Format
API_NUMBER	12 digit number assigned by the ISGS. Consists of "12" - state code for Illinois /three digit county code/five digit unique number/two digit re-drill code. <Foreign Index Key>	CHAR(12)
CASE_PIPE	Casing pipe diameter	CHAR(8)
CASEDEPTH	Depth of casing	NUMBER(5)
CASE_CEMENT_NUM	Amount of cement used	NUMBER(5)
CASE_CEMENT_WITH	Amount of cement measured in yards? feet? sacks?	CHAR(10)
CASE_NOTES	Notes related to casing information.	CHAR(100)

ISGS STATUS CODES AND DEFINITIONS

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STATUS CODE	STATUS DEFINITION
ABLOC	Abandoned Location
CBM	Coal Bed Methane
CBMP	Coal Bed Methane, Plugged
CMM	Coal Mine Methane
CMMP	Coal Mine Methane, Plugged
COAL	Coal Test
COALNR	Coal, No Paper Record Found
COALP	Coal Test, Plugged
CONF	Confidential Hole
CONF C	Confidential Coal Record
CONF M	Confidential Mineral Test
CPROT	Corrosion Protection
CPROTP	Corrosion Protection Plugged
CROP	Outcrop
DA	Dry and Abandoned, No Shows
DAG	Dry and Abandoned, Gas Shows
DAGP	Dry and Abandoned, Gas Shows, Plugged
DAO	Dry and Abandoned, Oil Shows
DAOG	Dry and Abandoned, Oil and Gas Shows
DAOGP	Dry and Abandoned, Oil and Gas Shows, Plugged
DAOP	Dry and Abandoned, Oil Shows, Plugged
DAP	Dry and Abandoned, No Shows, Plugged
DAW	Dry & Abandoned, left open for a water well
DAWP	Dry & Aband, left open for a water well, plugged
DAX	Dry and Abandoned, Administratively Plugged
DEAD	Dead Permit
DRIFT	Drift Mine
DRIFTP	Drift Mine, Plugged
DRY	Dry Hole (water well)
DRYP	Dry Hole (water well), Plugged
ENG	Engineering Test
ENGP	Engineering Test, Plugged
GAS	Gas Producer
GASP	Gas Producer, Plugged
GASX	Gas Well, Administratiely Plugged
GSTG	Gas Storage Well
GSTGG	Gas Storage Well, Gas Shows
GSTGGP	Gas Storage Well, Gas Shows, Plugged
GSTGP	Gas Storage Well, Plugged
INJ	Undesignated Injection Well
INJA	Air Injection Well
INJAP	Air Injection Well, Plugged
INJCM	Chemical Injection Well
INJCMP	Chemical Injection Well, Plugged
INJCS	Coal Slurry Injection Well
INJCSP	Coal Slurry Injection Well, Plugged
INJD	Detergent Injection Well
INJDP	Detergent Injection Well, Plugged
INJG	Gas Injection Well

ISGS STATUS CODES AND DEFINITIONS

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STATUS CODE	STATUS DEFINITION
INJGP	Gas Injection Well, Plugged
INJHW	Hot Water Injection Well
INJHWP	Hot Water Injection Well, Plugged
INJOGP	Water Injection Well, Oil and Gas Shows, Plugged
INJP	Undesignated Injection Well, Plugged
INJS	Steam Injection Well
INJSP	Steam Injection Well, Plugged
INJSW	Salt Water Disposal and Water Injection
INJSWP	Salt Water Disposal and Water Injection, Plugged
INJT	Thermal Injection Well
INJTP	Thermal Injection Well, Plugged
INJW	Water Injection Well
INJWGP	Water Injection Well, Gas Shows, Plugged
INJWO	Water Injection Well, Oil Shows
INJWOG	Water Injection Well, Oil and Gas Shows
INJWOP	Water Injection Well, Oil Shows, Plugged
INJWP	Water Injection Well, Plugged
INJWS	Water Injection and Water Supply
INJWSP	Water Injection and Water Supply, Plugged
INJX	Undesignated Injection Well, Admin. Plugged
JA	Junked and Abandoned
JAG	Junked and Abandoned, Gas Shows
JAGP	Junked and Abandoned, Gas Shows, Plugged
JAO	Junked and Abandoned, Oil Shows
JAOG	Junked and Abandoned, Oil and Gas Shows
JAOGP	Junked and Abandoned, Oil and Gas Shows, Plugged
JAOP	Junked and Abandoned, Oil Shows, Plugged
JAP	Junked and Abandoned, Plugged
LUST	Leaking Underground Storage Tank
METHV	Methane Vent
METHVP	Methane Vent, Plugged
MINER	Mineral Test
MINERP	Mineral Test, Plugged
MONIT	Water Well Monitoring Well
MONITP	Water Well Monitoring Well Plugged
MSERV	Mine Service
MSERV P	Mine Service Plugged
MSFT	Mine Shaft
MSFTP	Mine Shaft, Plugged
OBS	Observation Well
OBSG	Observation Well, Gas Shows
OBSGP	Observation Well, Gas Shows, Plugged
OBSO	Observation Well, Oil Shows
OBSOG	Observation Well, Oil & Gas Shows
OBSOGP	Observation Well, Oil & Gas Shows, Plugged
OBSOP	Observation Well, Oil Shows, Plugged
OBS P	Observation Well, Plugged
OIL	Oil Producer
OILGI	Combination Oil Producer and Gas Injection

ISGS STATUS CODES AND DEFINITIONS

June 4, 2014

STATUS CODE	STATUS DEFINITION
OILGIP	Comb. Oil Producer and Gas Injection, Plugged
OILGS	Combination Oil and Gas Producer
OILGSP	Combination Oil and Gas Producer, Plugged
OILP	Oil Producer, Plugged
OILSD	Oil Well and Salt Water Disposal
OILSDP	Oil Well and Salt Water Disposal, Plugged
OILWI	Combination Oil Producer and Water Injection
OILWIP	Comb. Oil Producer and Water Injection, Plugged
OILX	Oil Well, Administratively Plugged
PERMIT	Permit to Drill Issued
PLUG	Plugged Hole
SALT	Salt Producer
SALTO	Salt Producer, Oil Shows
SALTOP	Salt Producer, Oil Shows, Plugged
SALTP	Salt Producer, Plugged
SLOPE	Slope Mine
SLOPEP	Slope Mine, Plugged
STRAT	Stratigraphic Test
STRATP	Stratigraphic Test, Plugged
STRIP	Strip Mine
STRIPP	Strip Mine, Plugged
STRU	Structure Test
STRUP	Structure Test, Plugged
SWD	Salt Water Disposal, Service Well
SWDP	Salt Water Disposal, Service Well, Plugged
TA	Temporarily Abandoned
TAG	Temporarily Abandoned, Gas Shows
TAGP	Temporarily Abandoned, Gas Shows, Plugged
TAO	Temporarily Abandoned, Oil Shows
TAOG	Temporarily Abandoned, Oil and Gas Shows
TAOGP	Temporarily Abandoned, Oil and Gas Shows, Plugged
TAOP	Temporarily Abandoned, Oil Shows, Plugged
TAP	Temporarily Abandoned, Plugged
TAX	Temporarily Abandoned, Administratively Plugged
UNK	Unknown
UNKP	Unknown, Plugged
WASTE	Waste Disposal Well
WASTEP	Waste Disposal Well, Plugged
WATER	Water Well
WATERP	Water Well, Plugged
WATOT	Oil Test, left open for a water well
WATRS	Water Supply Well
WATRSP	Water Supply Well, Plugged
WTST	Water Well Test Hole
WTSTP	Water Test Hole, Plugged

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ISGS FORMATION CODES AND NAMES IN CODE ORDER

June 4, 2014

FORMATION CODE	FORMATION NAME
-99999	Unknown
009PLZC	Paleozoic
109BSMN	Basement
109GRNT	Granite
109PCMB	Pre-Cambrian
151LUDN	Loudon
151MNSM	Mount Simon
151MRRY	Murray
151SHDY	Shady
153BNTR	Bonneterre
153CPRG	Copper Ridge
153CRXN	Croixian
153DRBC	Dresbach
153DRBY	Derby
153DVIS	Davis
153ECLR	Eau Claire
153ELMH	Elmhurst sandstone
153ELVS	Elvins
153EMNC	Eminence
153FRNC	Franconia
153GLVL	Galesville
153IRNN	Ironton
153JRDN	Jordan
153LMBD	Lombard
153POTS	Potosi
153PRCR	Proctor
153PRVS	Proviso siltstone
153PSDM	Potsdam
153TMPL	Trempealeau
153TMPLS	Trempealeau Sand
159BASL	Basal Sand
159CMBR	Cambrian
159GRWS	Granite Wash
169CBOV	Cambro-Ordovician
169KNOX	Knox
169OVCB	Ordovician Base
201CNDN	Canadian Series
201CTTR	Cotter
201GRSD	Gunter Sand
201GSCB	Gasconade
201JFRC	Jefferson City
201NRCM	New Richmond
201ONOT	Oneota
201PRDC	Prairie Du Chien
201RBDX	Roubidoux
201SHKP	Shakopee
202ABER	Abernathy
202ANCL	Ancell Group
202BKHR	Buckhorn

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FORMATION CODE	FORMATION NAME
202BKRV	Black River
202BOLS	Boles
202BRCK	Brickeys
202CMPL	Champlainian
202DCRH	Decorah
202DNLT	Dunleith Dolomite
202DTCN	Dutchtown
202EVRN	Everton
202GBRG	Guttenburg
202GLEN	Galena
202GLND	Glenwood
202GRDD	Grand Detour
202JCHM	Joachim
202KMCK	Kimmswick
202KRSS	Kress
202MCSN	Moccasin
202MFLN	Mifflin
202NCHS	Nachusa
202OTWA	Ottawa Super Group
202PCNC	Pecatonica
202PLTN	Plattin
202PLVL	Platteville
202QMBY	Quimby Mill Dolomite
202RDLY	Ridley
202SPCF	Spechts Ferry
202SPTR	St Peter
202SRVR	Stones River
202STJM	St James
202STPL	St Paul
202TRNN	Trenton
203BRRD	Brainard
203CLRM	Clermont
203CNCN	Cincinnatian Series
203DUBQ	Dubuque Dolomite
203EDEN	Eden
203ELGN	Elgin
203FRAK	Fort Atkinson
203FRVL	Fernvale
203MLLN	Million
203MQKT	Maquoketa
203MSVL	Maysville
203NEDA	Neda
203OCCK	Orchard Creek
203QNSN	Queenston
203RCMD	Richmond
203SCLS	Scales Shale
203THBS	Thebes
203WSLK	Wise Lake Dolomite
209ODVC	Ordovician

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FORMATION CODE	FORMATION NAME
209ODVCH	Ordovician Shale
251ALXD	Alexandrian
251BSFD	Brassfield
251CLNN	Clinton
251EDGD	Edgewood
251ELWD	Elwood
251KNKK	Kankakee
251NOIX	Noix
251SXCK	Sexton Creek
251WLHM	Wilhelmi
252BBRG	Brainbridge
252BLSD	Blue Sd
252BRPR	Brownsport
252DXON	Dixon
252HNGN	Huntington
252ILLN	Illion
252JOLT	Joliet
252LCKP	Lockport
252LSVL	Louisville
252MCSP	Moccasin Springs
252NGRN	Niagaran Base
252NGRNL	Niagaran Lime
252NIGR	Niagaran
252RCIN	Racine
252RCSR	Rochester
252SCLR	St Clair
252SLRNM	Silurian Middle
252WKSH	Waukesha
253CYGN	Cayugan
253SLIN	Salina
259SLRN	Silurian
259SLRNR	Silurian Reef
269DVSR	Devonian - Silurian
269HNTN	Hunton
269SLDV	Silurian - Devonian
301BCKB	Backbone
301BILY	Bailey
301BOBL	Bob Limestone
301CLCK	Clear Creek
301DVNNL	Devonian Lower
301GRKB	Grassy Knob
301HDBG	Helderberg
301LBLV	Lobelville
301SHEP	Sheppard
302ALTO	Alto
302BLCR	Blocher
302BRKT	Burket
302CDVL	Cedar Valley
302COPR	Cooper

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FORMATION CODE	FORMATION NAME
302DCCK	Dutch Creek
302DRRV	Detroit River
302DVNLM	Devonian Lime
302DVNNM	Devonian Middle
302GENV	Geneva
302GRDT	Grand Tower
302HBRD	Hibbard
302HONG	Hoing
302HRVL	Huntersville
302JFVL	Jeffersonville
302LNGL	Lingle
302LNGLL	Lingle Lower
302LNGLS	Lingle Sand
302LNGLU	Lingle Upper
302MNGL	Mountain Glen
302SLBG	Sellersburg
302SPGV	Springvale
302TIOG	Tioga Metabentonite
302TLLY	Tully
302WPSP	Wapsipinicon
303GENS	Genesee
303HDSD	Hardin
303KANE	Kane
303PRTG	Portage
303SLMR	Sylamore
304ALXD	Alexander
304BNSN	Benson
304PUND	Pound
304VLHD	Valley Head
304WLBG	Wellsburg
305BYRD	Bayard
305CNMN	Cinnamon
305HBGR	Harrisburg Run
305MCDD	McDonald
305MGHL	Magee Hollow
305RCBG	Richburg
305SGRR	Sugar Run
306CTNG	Chattanooga Base
306DVNNU	Devonian Upper
309DVNN	Devonian
309DVNNH	Devonian Shale
319CTNG	Chattanooga
319GRCK	Grassy Creek
319HAMB	Hamburg Oolite
319MPDV	Mississippian Base
319MPML	Maple Mill Shale
319NALB	New Albany
319OHIO	Ohio
319SDCK	Sweetland Creek

ISGS FORMATION CODES AND NAMES IN CODE ORDER

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FORMATION CODE	FORMATION NAME
351BERE	Berea
351CHUT	Chouteau
351GLPK	Glen Park
351HNBL	Hannibal
351HNSV	Hannibal-Saverton
351KDRK	Kinderhook
351LUSN	Louisiana
351RCKF	Rockford
351SPGV	Springville
351SVRN	Saverton
352BILY	Bilyeu
352BRDN	Borden
352BRKK	Burlington-Keokuk
352BRLG	Burlington Lime
352COLE	Cole
352CRPR	Carper
352CRPRL	Carper Lower
352CRPRM	Carper Middle
352CRPRU	Carper Upper
352FRGL	Fern Glen
352FRPN	Fort Payne
352FRPNY	Fort Payne Chert
352KKUK	Keokuk
352LOGN	Logan
352MSSPL	Mississippian Lower
352OSGE	Osage
352OSGES	Osage Sand
352PRSM	Portsmouth
353FRDN	Fredonia
353HFNR	Hoffner
353HRBG	Harrodsburg
353JOPP	Joppa
353KRNK	Karnak
353LVIS	Levias
353MCKDO	McClosky Dolomite
353MCLK	McClosky
353MCLKA	McClosky A
353MCLKB	McClosky B
353MCLKC	McClosky C
353MCLKD	McClosky D
353MCLKF	McClosky F
353MCLKG	McClosky G
353MCLKL	McClosky Lower
353MCLKM	McClosky Middle
353MCLKU	McClosky Upper
353MRMC	Meramec
353MTVL	Martinsville
353OHAR	Ohara
353OHARL	Ohara Lower

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FORMATION CODE	FORMATION NAME
353OHARU	Ohara Upper
353RCLR	Rosiclare
353RCLRD	Rosiclare Dolomite
353RCLRS	Rosiclare Sand
353RLDS	Reynolds
353RPCK	Ramp Creek
353SLEM	Salem
353SLEML	Salem Lower
353SLEMM	Salem Middle
353SLEMU	Salem Upper
353SPRM	Spar Mountain
353STGV	Ste Genevieve
353STLS	St Louis
353STLSD	St Louis Dolomite
353STLSL	St Louis Lower
353STLSM	St Louis Middle
353STLSU	St Louis Upper
353ULLN	Ullin
353VLMR	Valmeyer
353WFLD	Westfield
353WRSW	Warsaw
353WRSWL	Warsaw Lower
353WRSWM	Warsaw Middle
353WRSWU	Warsaw Upper
354ALRD	Allard
354AVIS	Avis
354AXVS	Aux Vases
354AXVSD	Aux Vases Dolomite
354AXVSL	Aux Vases Sand Lower
354AXVSU	Aux Vases Sand Upper
354BCCK	Beech Creek
354BCHR	Beech River
354BGCF	Big Clifty
354BNST	Benoist
354BNSTL	Benoist Lower
354BNSTM	Benoist Middle
354BNSTU	Benoist Upper
354BRLW	Barlow
354BTHL	Bethel
354BVBD	Beaver Bend
354CLOR	Clore
354CLORL	Clore Lower
354CLORS	Clore Sand
354CLORU	Clore Upper
354CORA	Cora
354CPMN	Chapman
354CPRS	Cypress
354CPRSL	Cypress Lower
354CPRSM	Cypress Middle

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FORMATION CODE	FORMATION NAME
354CPRSU	Cypress Upper
354CSTR	Chester
354CVHL	Cave Hill
354DBLF	Downeys Bluff
354DGON	Degonia
354DGONL	Degonia Lower
354DGONM	Degonia Middle
354FLBL	False Barlow
354FRLS	Fraileys
354GLCD	Golconda
354GLCDL	Golconda Lower
354GLCDU	Golconda Upper
354GLND	Glen Dean
354GLNDL	Glen Dean Lower
354GLNDM	Glen Dean Middle
354GLNDU	Glen Dean Upper
354GRVL	Goreville
354GSPR	Gasper
354HNEY	Haney
354HRBG	Hardinsburg
354HRBGL	Hardinsburg Lower
354HRBGM	Hardinsburg Middle
354HRBGU	Hardinsburg Upper
354JCKS	Jackson
354KNCD	Kinkaid
354KNCDL	Kinkaid Lower
354KNCDU	Kinkaid Upper
354KRKD	Kirkwood
354LLMD	Little Menard
354MNRD	Menard
354MNRDL	Menard Lower
354MNRDM	Menard Middle
354MNRDS	Menard Sand
354MNRDU	Menard Upper
354MSSPU	Mississippian Upper
354NGLI	Negli Creek Limestone
354PAOL	Paoli limestone
354PCCV	Pencil Cave
354PCRK	Paint Creek
354PCRKL	Paint Creek Lower
354PCRKM	Paint Creek Middle
354PCRKU	Paint Creek Upper
354PLSN	Palestine
354PNNG	Pennington
354PPCR	Popcorn
354RDNR	Ridenhower
354RLVL	Reelsville
354RNLT	Renault
354RNLTLL	Renault Lower

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FORMATION CODE	FORMATION NAME
354RNLTM	Renault Middle
354RNLTU	Renault Upper
354SCBG	Scottsburg
354SHVL	Shetlerville
354SMPL	Sample
354SNGP	Stony Gap
354STIN	Stein
354TSPG	Tar Springs
354TSPGL	Tar Springs Lower
354TSPGM	Tar Springs Middle
354TSPGU	Tar Springs Upper
354TYGT	Tygett
354VINN	Vienna
354VINN2	Vienna 2
354WBSP	Webster Springs
354WILR	Weiler
354WLBG	Waltersburg
354WLBGL	Waltersburg Lower
354WLBGU	Waltersburg Upper
354WLCH	Walche
354YNKN	Yankeetown
359MSSP	Mississippian
359SONR	Sonora
401PNVT	Pennsylvanian top
401PSLVB	Pennsylvanian Basal
401PSLVL	Pennsylvanian Lower
401PSMS	Pennsylvanian - Mississippian
402BLLR	Bellair
403ABBT	Abbott
403AMPC	Assumption Coal
403BBLN	Babylon
403BCNN	Buchanan
403BDGP	Bridgeport
403BIHL	Biehl
403BIHLL	Biehl Lower
403BIHLU	Biehl Upper
403BLCL	Bell Coal
403BRCK	Battery Rock Sandstone
403BRDT	Bernadotte
403CLBGC	Coalburg Coal
403CLPL	Claypool
403CRLW	Curlew
403CRML	Carrier Mills Shale
403CSPG	Creal Springs
403CSVL	Caseyville
403DWCL	Delwood Coal
403GNTRC	Gentry Coal
403GRDF	Grindstaff Sandstone
403GRNG	Granger Sandstone

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FORMATION CODE	FORMATION NAME
403JRDNS	Jordan Sand
403KBKF	Kanawha Black Flint
403LCFDC	Litchfield Coal
403LFAPC	Litchfield/Assumption Coal
403MFLD	Mansfield
403MNLYC	Manley Coal
403MNTR	Mount Rorah Coal
403MRPH	Murphysboro Coal
403MRYB	Murray Bluff
403NBCL	New Burnside Coal
403NO2_C	No 2 Coal
403PNDS	Pounds Sandstone
403PRTL	Partlow
403PRTLL	Partlow Lower
403PRTLU	Partlow Upper
403PSVL	Pottsville
403RBNS	Robinson
403RBNSL	Robinson Lower
403RBNSM	Robinson Middle
403RBNSU	Robinson Upper
403RCCK	Raccoon Creek Group
403RCCK1	Raccoon Creek Group Sand 1
403RCCK2	Raccoon Creek Group Sand 2
403RCKC	Rockcastle
403RDGL	Ridgley
403RNBG	Reynoldsburg Coal
403SGN34	Siggins 3rd 4th
403SLRS	Sellers Limestone
403SLSD	Salt Sand
403TRDR	Tradewater
403TRDR1	Tradewater Sand 1
403TRDR2	Tradewater Sand 2
403TRTRC	Tarter Coal
403UNCL	Unnamed Coal 403
403VRGN	Vergennes Sandstone
403WLLS	Willis Coal
403WRCL	Wise Ridge Coal
403WYSD	Wayside Sandstone
404ALNB	Allenby Coal
404ANNA	Anna Shale
404AVRK	Anvil Rock
404BGCK	Big Creek Shale
404BNFK	Bankston Fork
404BRHLC	Briar Hill Coal #5A
404BRRN	Brereton
404CBDL	Carbondale
404CBDL1	Carbondale Sand 1
404CBDL2	Carbondale Sand 2
404CLCC	Colchester Coal

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FORMATION CODE	FORMATION NAME
404CNNT	Conant
404CNTN	Canton
404CSEY	Casey
404DDLX	Dudley
404DDLXU	Dudley Upper
404DKRB	Dykersburg Shale
404DKVN	Dekoven Coal
404DKVNL	Dekoven Coal Lower
404DKVNU	Dekoven Coal Upper
404DNVL	Danville Coal #7
404DVISC	Davis Coal
404EXCL	Excello Shale
404GALM	Galum
404GSSD	Gas Sand
404HNCK	Houchin Creek Coal
404HNVR	Hanover
404HRBGC	Harrisburg Coal
404HRNC	Herrin Coal #6
404JKCK	Jake Creek
404JMTN	Jamestown
404MCQR	Mecca Quarry Shale
404NO4_C	No 4 Coal
404NO5_C	No 5 Coal
404NO6_C	No 6 Coal
404NO7_C	No 7 Coal
404OKGV	Oak Grove Limestone
404PLZO	Palzo Sandstone
404PTVW	Pleasantview
404PVDC	Providence
404RCKIC	Rock Island Coal
404SDVD	St David
404SGNS	Siggins
404SGNS1	Siggins 1st
404SGNS2	Siggins 2nd
404SHRN	Seahorne
404SHTN	Shawneetown Coal #2A
404SLVL	Seelyville
404SMMM	Summun Coal #4
404SPGFC	Springfield Coal
404SRVT	Survant Coal
404SVLL	Seville
404TRNR	Turner Mine Shale
404TRVL	Trivoli
404UNCL	Unnamed Coal 404
404VMLV	Vermilionville
404WILYC	Wiley Coal
404WLSN	Wilson
405BRCKC	Brush Creek Coal
405CTHG	Carthage

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FORMATION CODE	FORMATION NAME
405CTLR	Cutler
405DGCL	De Graff Coal
405FRMG	Farmington Shale
405LVGS	Livingston
405MCLB	McLeansboro
405MLVL	Millersville
405MNSL	Minshall
405PIAS	Piasa
405RBCL	Rock Branch Coal
405SLCK	Shoal Creek
405WFKL	West Franklin
406CHPLC	Chapel Coal #8
406CRLV	Carlinville Ls
406CRMR	Cramer Limestone
406CUBA	Cuba
406IGFD	Inglefield Sandstone
406MCPN	Macoupin Limestone
406NO8_C	No 8 Coal
406PSLVU	Pennsylvanian Upper
406WOMCC	Womac Coal
409BGOT	Bogota Limestone
409BOND	Bond
409BOND1	Bond Sand 1
409BOND2	Bond Sand 2
409DDLVL	Dudley Lower
409DIXL	Dix Limestone
409DYKS	Dykstra
409FDVLC	Friendsville Coal
409FLAN	Flannigan
409FLCK	Flat Creek
409ISBL	Isabel
409KKAP	Kickapoo
409LKCR	Lake Creek Coal
409LNSD	Lonsdale
409LSLL	LaSalle
409MCLB	McClearys Bluff Coal
409MCML	Mount Carmel
409MDST	Modesto
409MTTN	Mattoon
409MTTN1	Mattoon Sand 1
409MTTN2	Mattoon Sand 2
409NWHV	New Haven
409OMEG	Omega
409PDCR	Pond Creek Coal
409PSLV	Pennsylvanian
409PTKA	Patoka
409PTKA1	Patoka Sand 1
409PTKA2	Patoka Sand 2
409PTRO	Petro

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FORMATION CODE	FORMATION NAME
409REEL	Reel
409SBVLC	Shelbyville Coal
409SHLB	Shelburn
409SHLB1	Shelburn Sand 1
409SHLB2	Shelburn Sand 2
409SMCK	Shamrock Limestone
409SPON	Spoon
409SRNT	Sorento
409STNF	Stonefort
409TBDGC	Trowbridge Coal
409UNCL	Unnamed Coal 409
453SAUK	Sauk
602FKBG	Fredericksburg
605BYLS	Baylis
605LWSN	Lawson
605MCNR	McNairy
605OLCK	Owl Creek
605TSCL	Tuscaloosa
609CRCS	Cretaceous
651CLTN	Clayton
651PLCN	Paleocene
651PRCK	Porters Creek
652EOCN	Eocene
652WLCX	Wilcox
659TRTR	Tertiary
680MNDS	Mounds Gravel
701GCDF	Glacial Drift
701PLSC	Pleistocene
701YRMT	Yarmouth Soil
702ABNT	Alburnett
702BNNR	Banner
702HLRY	Hillery
702LRLE	Lierle
702PYRMT	Pre-Yarmouthian
702WFCK	Wolf Creek
703YRMT	Yarmouthian
704GLSF	Glasford
704ILLN	Illinoian
704LVLD	Loveland Silt
704MTPL	Metropolis formation
704PERL	Pearl
704PTBG	Petersburg
704TNRF	Teneriffe Silt
704VAND	Vandalia Till Member
705SNGM	Sangamonian
706ASHM	Ashmore
706BATE	Batestown Till Member
706ELBN	Elburn Drift
706EQLT	Equality

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FORMATION CODE	FORMATION NAME
706HNRY	Henry
706LMNT	Lemont
706MKNW	Mackinaw Member
706MRTN	Morton Loess
706OKLD	Oakland Till Member
706PEOR	Peoria Silt
706RCHL	Richland Loess
706ROBN	Robein Silt
706RXNA	Roxana Silt
706TSKW	Tiskilwa Till Member
706WDRN	Wedron
706WDWT	Wadsworth
706WSCN	Wisconsinan
709QRNR	Quaternary
750CAHO	Cahokia Alluvium
750HLCN	Holocene
750PARK	Parkland sand
750PYTN	Peyton Colluvium
999CMNG	commingled
999RSDM	residuum
999TRRA	terra rosa

