NATIONAL GRID
HEMPSTEAD INTERSECTION STREET FORMER MGP SITE
WELL DECOMMISSIONING SCOPE OF WORK

1 SCOPE OF WORK

The following three methods of well decommissioning will be performed on select wells at the Hempstead site. All of the wells are located within the site proper.

1. Pull entire well
2. Add sand, leave well in place
3. Sand well followed by casing pulling

The attached table identifies the wells and the applicable decommissioning method. The well locations are shown in the attached figure.

Method #1 – Pull Entire Well

In this method, the well shall be pulled and the borehole allowed to collapse. Appropriate actions shall be taken to ensure that the well borehole is not a tripping hazard. The entire well interval shall then be subjected to ISS treatment. These wells are entirely within the interval to be ISS-treated. This method shall be performed on three wells (HIMW-1S, HIMW-19S, and IPR-3).

Method #2 – Add Sand, Leave Well In Place

With this method, sand shall be added to the well up to the bottom depth of the ISS treatment zone. The remainder of the well shall be left open. As the ISS treatment progresses, the well portion within the ISS treatment interval will be destroyed and incorporated into the ISS mix by the augers. No grouting is proposed as the finished ISS treatment zone will function as the grout above the well screen. This method shall be performed primarily on narrow-diameter wells (1-inch and 2-inch) that are much harder to pull out and are not expected to interfere with the operation of the auger. Additionally, six 6-inch diameter IPR wells shall be abandoned by this method as they are installed much more deeply (56 to 91 feet bgs) than the other 6-inch IPR wells and hence will be difficult to pull. Overall, this method will be performed on five 1-inch diameter wells, 15 2-inch diameter wells, and six 6-inch diameter wells.

Method #3 – Sand Well Followed by Casing Pulling

This method will involve puncturing the well bottom, adding enough sand to extend from the bottom of the well boring to the bottom of the treatment interval, and then pulling the casing. The remainder of the borehole will be allowed to collapse as that interval will be subject to ISS treatment. This method would be used on wells that are larger in diameter (6-inch) and/or shallower such that they could more easily be pulled. Additionally, these wells extend below the depth of treatment, but the portion that extends below treatment depth is exclusively screen. This method will apply to 20 6-inch diameter wells and one 2-inch diameter well. It is understood that all the wells may not be able to be pulled. URS will discuss alternate well abandonment approaches with the Contractor and the Client.

2 RESPONSIBILTIES

The following specific responsibilities will be assumed by URS and/or National Grid:

1. URS will provide an onsite representative to monitor Contractor's work.
2. URS will identify the well locations in the field.
3. URS will coordinate access to the work areas.
4. After about November 14, 2011, National Grid, through their ISS remediation contractor Entact, will be responsible for transportation and disposal of well decommissioning waste materials, including storage containers (e.g., rolloffs) for said wastes. Prior to November 14, 2011, Contractor shall provide drums to contain solid waste materials.

The Contractor shall assume the following responsibilities:

5. It is the Contractor's responsibility to complete all work to the satisfaction of the URS site representative. Work so performed will form the basis for compensation.
6. In the event of equipment malfunction, the Contractor shall provide replacement equipment of equivalent specification in a timely manner so as not to incur a delay unacceptable to URS.
7. The Contractor shall be responsible for contacting the utility markout services (e.g. Dig-Safe) to mark out any buried public utilities in the proposed drilling areas.

8. In the event the Contractor does not obtain the necessary permits and/or utility markouts, causing an unnecessary delay in work, any billed charges for mobilization and/or standby time will not be approved.
9. During all intrusive activities, the drilling contractor must maintain odor suppressing foam or other materials (e.g., plastic) to mitigate nuisance odors.
10. The Contractor shall provide all necessary permits for intrusive work and water use.
11. The Contractor shall provide for the security of his equipment and will ensure the security of the borings prior to completion.
12. The Contractor shall provide all barriers, signage, temporary fencing, etc. needed to ensure public and traffic safety in the areas of drilling activities.
13. The Contractor shall provide all necessary equipment, parts, and supplies to complete the work.
14. All down-hole and excavation equipment must be decontaminated prior to and after use. All decontamination fluids and other investigation-derived waste (IDW) must be containerized by the Contractor for offsite disposal by others.
15. The Contractor shall stage all IDW at a secure location as directed by the URS supervising representative.
16. All disturbed areas shall be restored to a condition equal to or better than that prior to work
17. The Contractor shall be responsible for working in harmony with labor unions.

3 HEALTH AND SAFETY

The work to be performed under this Scope of Work will occur in areas of known soil contamination. It is anticipated that all work will be conducted in 8-hour on-site days in USEPA Level "D" personal protective equipment (PPE). The Contractor shall provide safety equipment necessary for its own employees.

The Contractor shall, at a minimum, satisfy all applicable federal, state, and local statutes, regulations and ordinances regarding health and safety. Beyond this minimum requirement, the Contractor shall develop and submit to URS for review a health and safety plan specific to this Scope of Work before start of work. As an alternative, the Contractor has the option of adopting in writing the URS Health and Safety Plan for the site.

All personnel onsite must be appropriately trained and participate in a medical monitoring program to comply with the OSHA regulations found in 29 CFR 1910.120 and are required to bring copies of all certificates with them on the first day of field activities.

4 CONFIIDENTIALITY

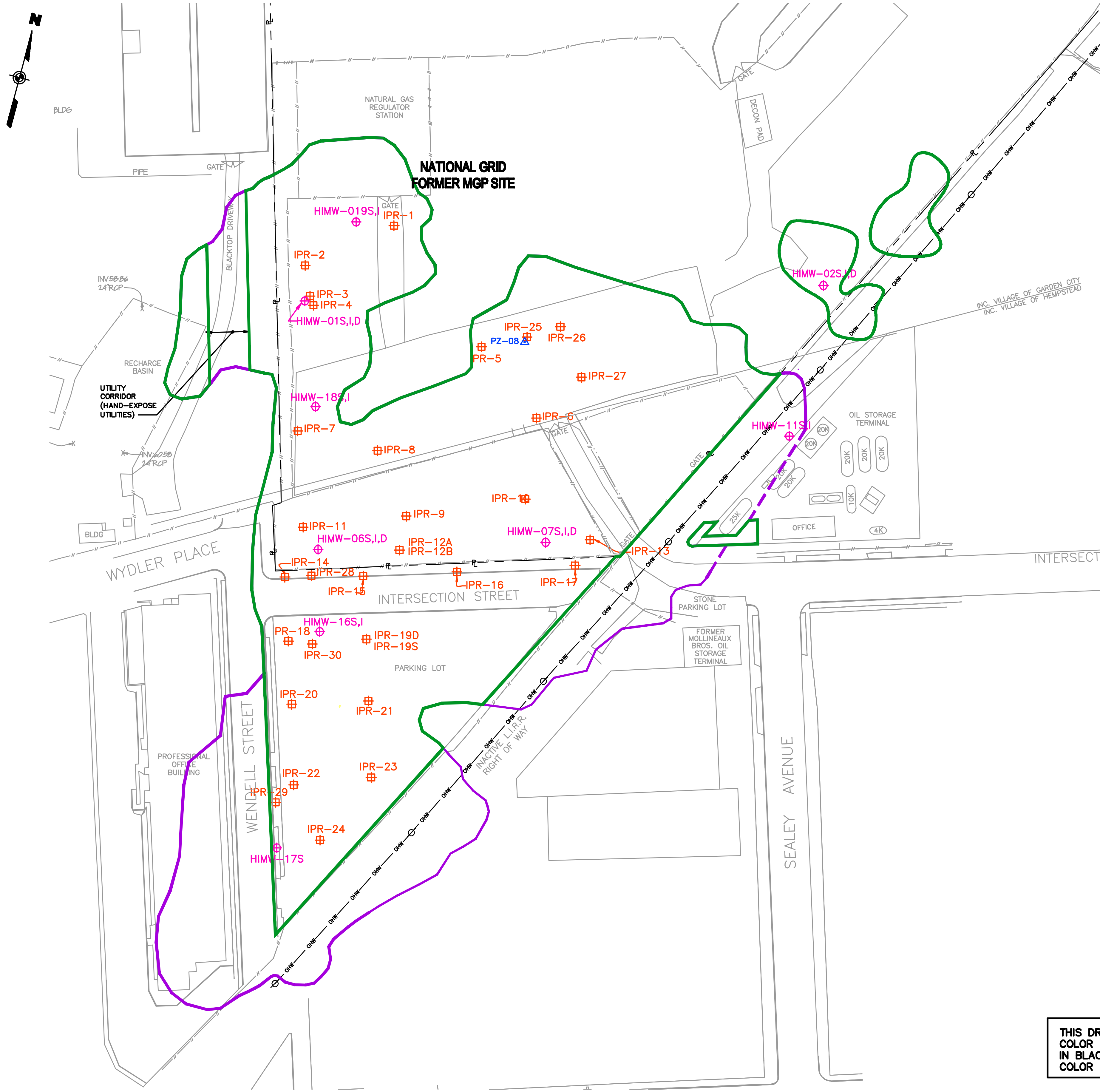
It is important that all information produced by the activities of the Contractor, and all information be treated, developed, or compiled in connection with this project must be kept confidential. All information developed by, or on behalf of Contractor in connection with this subcontract, shall be the sole and exclusive property of URS/National Grid and must be promptly turned over to URS at the completion of work. Data, reports, memoranda, and correspondence developed or compiled in connection with this project must be kept confidential.

5 SCHEDULE

Work shall begin during the week of November 6, 2011. The following wells shall be decommissioned first:

IPR-7
IPR-8
IPR-9
IPR-11
IPR-12A
IPR-12B
HIMW-6S, I, and D

These wells must be decommissioned by November 14, 2011.



LEGEND - EXISTING

—//—	FENCE
—℄—	FORMER MGP SITE BOUNDARY AND APPROXIMATE PROPERTY LINE
(solid purple line)	DELINEATED LIMIT OF MGP SOURCE MATERIAL
(dashed purple line)	APPROXIMATE LIMITS OF MGP SOURCE MATERIAL
(outline)	LOCATION OF EXISTING STRUCTURE
IPR-12	IRM PRODUCT RECOVERY WELL, URS 2008 & 2009
PZ-02	PIEZOMETER/WELL LOCATION FROM ROY F. WESTON FIELD INVESTIGATION, MARCH 1993
HIMW-05S	GROUNDWATER MONITORING WELL (SHALLOW ZONE)
HIMW-05I	GROUNDWATER MONITORING WELL (INTERMEDIATE ZONE)
HIMW-05D	GROUNDWATER MONITORING WELL (DEEP ZONE)
	EXISTING METAL POLE
	EXISTING SIGN
	EXISTING GATE

NOTE:
NATIONAL GRID WILL PERFORM WELL DECOMMISSIONING WORK UNLESS OTHERWISE DIRECTED.

WELL DECOMMISSIONING SUMMARY

Well ID	Well Depth (ft bgs)	Total Depth (ft bgs)	Ground Surface Elevation (ft amsl)	Casing Diameter (in)	Screened Depths Interval (ft bgs)	Screened Depths Description
HIMW-01S	38	38	69.41	2	26-36	Slotted PVC
HIMW-01I	86	86	69.27	2	74-87	Slotted PVC
HIMW-01D	124	152	69.39	2	112-122	Slotted PVC
HIMW-02S	40	40	71.79	2	28-38	Slotted PVC
HIMW-02I	90	90	76.82	2	78-88	Slotted PVC
HIMW-02D	116	130.5	71.73	2	104-114	Slotted PVC
HIMW-06S	37.5	38	68.3	2	25.5-35.5	Slotted PVC
HIMW-06I	84	85	68.09	2	72-82	Slotted PVC
HIMW-06D	118	132.5	67.89	2	106-116	Slotted PVC
HIMW-07S	41	41	70.8	2	29-39	Slotted PVC
HIMW-07I	90	90	70.31	2	78-88	Slotted PVC
HIMW-07D	117	132	70.75	2	105-115	Slotted PVC
HIMW-11S	40	40	71.69	2	28-38	Slotted PVC
HIMW-11I	92	92	71.6	2	80-90	Slotted PVC
HIMW-11D	121	126	71.61	2	109-119	Slotted PVC
HIMW-12S	34	35	61.85	2	22-32	Slotted PVC
HIMW-12I	75	76	61.9	2	63-73	Slotted PVC
HIMW-12D	129	182	62.09	2	117-127	Slotted PVC
HIMW-13S	49	50	73.14	2	38-48	Slotted PVC
HIMW-13I	82	83	73.01	2	70-80	Slotted PVC
HIMW-13D	122	175	72.95	2	110-120	Slotted PVC
HIMW-14I	97	97	72.01	2	85-95	Slotted PVC
HIMW-14D	152	152	71.99	2	140-150	Slotted PVC
HIMW-15I	92	93	64.59	2	80-90	Slotted PVC
HIMW-15D	153.5	153.5	64.36	2	141.5-151.5	Slotted PVC
HIMW-16S	36	36	67.81	2	24-34	Slotted PVC
HIMW-16I	82	82	67.92	2	70-80	Slotted PVC
HIMW-17S	37	37	66.42	2	25-35	Slotted PVC
HIMW-18S	42	42	69.94	2	25-40	Slotted PVC
HIMW-18I	72	72	70.07	2	55-70	Slotted PVC
HIMW-19S	37	37	69.42	2	25-35	Slotted PVC
HIMW-19I	67	67	69.66	2	55-65	Slotted PVC
HIMW-20S	37	37	70.79	2	25-35	Slotted PVC
HIMW-20I	75	75	70.94	2	63-73	Slotted PVC
IPR-1	45	45	NM	1	10-45	Slotted PVC
IPR-2	75	75	NM	6	15-70	Slotted PVC
IPR-3	45	45	NM	6	10-40	Slotted PVC
IPR-4	88	88	NM	6	73-83	Slotted PVC
IPR-5	55	55	NM	1	10-55	Slotted PVC
IPR-6	56.5	56.5	NM	6	11.5-51.5	Slotted PVC
IPR-7	45	45	NM	1	10-45	Slotted PVC
IPR-8	55	55	NM	1	10-50	Slotted PVC
IPR-9	65	65	NM	6	10-60	Slotted PVC
IPR-10	45	45	NM	6	15-40	Slotted PVC
IPR-11	45	45	NM	6	15-40	Slotted PVC
IPR-12A	45	45	NM	1	10-45	Slotted PVC
IPR-12B	45	45	NM	6	15-40	Slotted PVC
IPR-13	45	45	NM	6	15-40	Slotted PVC
IPR-14	43.8	43.8	NM	6	8.8-38.8	Slotted PVC
IPR-15	44.5	44.5	NM	6	9.4-39.4	Slotted PVC
IPR-16	51	51	NM	5.75	16-46	Slotted PVC
IPR-17	56	56	NM	5.75	21-51	Slotted PVC
IPR-18	50	50	NM	6	15-45	Slotted PVC
IPR-19S	45	45	NM	6	10-40	Slotted PVC
IPR-19D	91	91	NM	6	65-85	Slotted PVC
IPR-20	45	45	NM	6	10-40	Slotted PVC
IPR-21	45	45	NM	6	10-40	Slotted PVC
IPR-22	45	45	NM	6	10-40	Slotted PVC
IPR-23	45	45	NM	6	10-40	Slotted PVC
IPR-24	45	45	NM	6	20-40	Slotted PVC
IPR-25	45	45	NM	6	15-40	Slotted PVC
IPR-26	45	45	NM	6	25-40	Slotted PVC
IPR-27	45	45	NM	6	25-40	Slotted PVC
IPR-28	50	50	NM	6	25-40	Slotted PVC
IPR-29	50	50	NM	6	25-40	Slotted PVC
IPR-30	50	50	NM	6	25-40	Slotted PVC
PZ-08	38	38	70.89	2	26-36	Slotted PVC

ft bgs	feet below ground surface
ft amsl	feet above mean sea level
in	inches
NM	not measured

SOURCES:

- HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURED GAS PLANT SITE FINAL REMEDIAL INVESTIGATION REPORT INDICATED ON DWG-3.
- URS, MARCH 2006, URS IRM INVESTIGATION DATA – IPR WELL CONSTRUCTION LOGS

NOTES:

1. WELLS SHALL BE DECOMMISSIONED IN ACCORDANCE WITH SPECIFICATION SECTION 02610.
2. ONLY WELLS WITHIN THE PROPOSED SOLIDIFICATION AREA ARE TO BE DECOMMISSIONED.
3. ONLY THE WELLS TO BE DECOMMISSIONED ARE SHOWN ON THIS SHEET.
4. FOR LOCATION OF EXISTING TREES, SEE DWG-3.

THIS DRAWING CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR AS SHOWN ON ORIGINAL CONTRACT DRAWINGS. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.

50' 0 50'
SCALE IN FEET

NO.	MADE BY	APPROVED BY	DATE	DESCRIPTION

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THE HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURED GAS PLANT SITE

WELL DECOMMISSIONING PLAN

Scale: AS SHOWN | Date: APRIL 2011 | WORK DWG

WELL DECOMMISSIONING
NATIONAL GRID
HEMPSTEAD INTERSECTION STREET FORMER MGP SITE

Method	Well ID	Depth of Treatment	Interval to be Decommissioned (ft bgs)	Length of Decommission	Well Diameter	Screen Top	Screen Bottom	Total Depth
1	HIMW-01S	67	0 - 38	38	2	26	36	38
1	HIMW-19S	40	0 - 37	37	2	25	35	37
1	IPR-3	66	0 - 45	45	6	10	40	45
2	HIMW-01D	67	67 - 124	57	2	112	122	124
2	HIMW-01I	67	67 - 86	19	2	74	84	86
2	HIMW-061	34	34 - 85	51	2	72	82	85
2	HIMW-06D	34	34 - 133	99	2	106	116	133
2	HIMW-06S	34	34 - 38	4	2	26	36	38
2	HIMW-07D	40	40 - 117	77	2	105	115	117
2	HIMW-07I	39	39 - 90	51	2	78	88	90
2	HIMW-07S	40	40 - 41	1	2	29	39	41
2	HIMW-18I	35	35 - 72	37	2	55	70	72
2	HIMW-18S	35	35 - 42	7	2	25	40	42
2	HIMW-19I	41	41 - 67	26	2	55	65	67
2	IPR-1	36	36 - 45	10	1	10	45	45
2	IPR-12A	35	35 - 45	11	1	10	45	45
2	IPR-2	66	66 - 75	9	6	15	70	75
2	IPR-4	33	33 - 88	55	6	73	83	88
2	IPR-5	35	35 - 55	21	1	10	55	55
2	IPR-6	50	50 - 57	7	6	12	52	57
2	IPR-7	34	34 - 45	12	1	10	45	45
2	IPR-8	35	35 - 55	21	1	10	50	55
2	IPR-9	35	35 - 65	30	6	10	60	65
3	IPR-10	34	34 - 45	11	6	15	40	45
3	IPR-11	34	34 - 45	12	6	15	40	45
3	IPR-12B	35	35 - 45	11	6	15	40	45
3	IPR-13	39	39 - 45	6	6	15	40	45
3	IPR-25	35	35 - 45	10	6	15	40	45
3	IPR-26	41	41 - 45	4	6	25	40	45
3	IPR-27	41	41 - 45	4	6	25	40	45
3	PZ-08	35	35 - 38	3	2	26	36	38

1	Well is entirely within treatment zone. Pull with no sand or grout or leave in place
2	Place sand to treatment depth, leave remaining interval open to ISS
3	Puncture well, pull casing with sand inside