IESI ENGINEERING, P.C.

NATIONAL GRID
FORMER MOHICAN STREET MGP
HUDSON RIVER, GLENS FALLS, NY

SEDIMENT MAPPING
ROV SURVEY REPORT

OCC Project No. 205099.1
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1.0 INTRODUCTION

Ocean and Coastal Consultants Engineering, P.C., on behalf of IESI Engineering P.C. (IESI) and National Grid, has completed surveys of the Hudson River bottom located in the vicinity of the former Glens Falls Manufactured Gas Plant (MGP) located at 14 Mohican Street, Glens Falls, New York. This work was conducted in accordance with the "Revised Work Plan for Mapping of a Portion of the Hudson River Bottom" submitted to New York State Department of Environmental Conservation (NYSDEC) on May 23, 2006, and the approval of the Revised Work Plan issued by the NYSDEC in their letter dated September 11, 2006.

In general, the aforementioned work plan was prepared pursuant to a request by NYSDEC for National Grid to assess the sediment in the Hudson River that may be impacted by MGP-related compounds. The surveys were a result of NYSDEC's concerns regarding the previous sediment sampling efforts and request that additional information be collected to complete the remedial investigation. The NYSDEC requested that the river bottom be mapped to determine the approximate location of sediment and MGP-wastes present in this area of the Hudson River.

OCC mapped the river using a two phase approach: Phase I included a hydrographic survey and side-scan sonar; Phase II consisted of a bottom survey using a remotely-operated vehicle (ROV). A description of the work performed and a summary of the findings is described below.

2.0 WORK PERFORMED

2.1 PHASE I: HYDROGRAPHIC SURVEY AND SIDE-SCAN SONAR

The hydrographic survey and side-scan sonar mapping were performed by Hydro Data, Inc. on November 27, 2006. Hydro Data mobilized a two-person field crew including an ACSM certified hydrographer. The crew was equipped with a survey vessel, a Leica Model "MX9400N" and "MX9400R" differential global positioning system (DGPS), and an Innerspace Model "448" digital depth sounder. Water depths with an accuracy of ±0.1 foot were recorded relative to a known horizontal control point. Data was corrected to project datum (NGVD 29) and horizontal control (New York State Plane coordinate system) during post-processing.

The side-scan sonar survey was performed using a Marine Sonics Technology "Sea Scan" 600kH system. In operation, the sonar sensor unit, referred to as the "tow-fish", is towed by the survey vessel through the area of investigation. Two simultaneous fan-shaped acoustic beams, oriented at right angles to the tow-fish, were continually transmitted and then reflected off objects and seafloor features. The reflected signals were received by the transducers in the tow-fish, filtered, amplified and presented graphically to yield a display analogous to an oblique photograph of the river bottom and the objects on it. The side-scan sonar system accepted the DGPS positioning system information which was integrated with side-scan sonar data, providing location of side-scan targets. The side-scan sonar record showed general bottom sediment type and the presence or absence of debris and provided the horizontal and vertical images of any objects located within the survey area.

The results of the Phase I activities, including the Hydro Data, Inc. report and survey drawings, were previously submitted under separate cover in March 2007, and are not included with this report.

2.2 PHASE II: ROV SURVEY FALL 2006

OCC had a three person crew, consisting of one (1) professional engineer, one (1) engineer-in-training, and one (1) field technician onsite from November 28 through November 30, 2006. The crew and work was staged from a pontoon boat anchored in the river. A mini Remotely Operated Vehicle (ROV) with real time positioning and video imaging equipment was used to map the river bottom in the area of concern (AOC).

The ROV was integrated with a navigation system that provided real time tracking of the ROV in geo-referenced coordinates. The navigation system consisted of four (4) transponders that were deployed in the river to provide a long baseline (500 meter range) positioning system. The transponders were located using a DGPS system and "talked" to one another and the ROV to provide its position by acoustic pings.

On November 28th, the transponders were secured to tripods and deployed in a grid pattern along the shoreline on both sides of the river encompassing the AOC. It was quickly determined that the tripods would be unable to remain upright due to the steep slope and irregular rocky bottom of the river in addition to the swift current. The tripods were removed and abandoned and the transponders were then deployed using an anchor and buoy system. After the ROV was deployed, it was found that the transponders were not "talking" to one another and the ROV could not get a fixed position. The remainder of the day was spent troubleshooting the equipment and no sediment mapping data was obtained.

On November 29th, the transponders were deployed using the anchor and buoy system in a large grid formed on both sides of the river shoreline, but in different locations than the day before. Again, it was found that the transponders were not "talking" to one another and the ROV could not get a fixed position. It was determined that the inability for the transponders and the ROV to communicate may be due to interference from the irregular rocky bottom of the river. The ROV was deployed to test this theory and OCC discovered the remains of a large rock-filled timber crib structure within the AOC. This structure was causing a line-of-sight issue between the ROV and the transponders. The transponders were redeployed using an approximate 50 meter grid avoiding the timber structure. The ROV was then able to communicate with the transponders to get an accurate position.

On November 30th, the transponders were deployed in a tight grid in the southern portion of the AOC as depicted in Figure 1 in Appendix B. The ROV was able to communicate with the transponders and get real time positioning. The track of the ROV was displayed on an aerial image of the site which enabled the crew to monitor the progress of the investigation and to ensure that the AOC was adequately covered. The entire underwater investigation was recorded on digital video disc media (DVD), a copy of which accompanies this report. Certain information regarding the ROV is recorded on the bottom left of the video display. The number to the right of the "D" is the depth of the ROV in feet. The number to the right of the "H" is the compass

heading in degrees (000 is north, 090 is east, 180 is south, and 270 is west). A summary of our findings follows.

2.3 PHASE II: ROV SURVEY SPRING 2007

OCC had a three person crew, consisting of one (1) professional engineer, one (1) engineer-in-training, and one (1) engineer onsite from June 4 through June 8, 2007. The crew and work was staged from a boat anchored in the river. A mini ROV with real time positioning and video imaging equipment was used to map the river bottom in the AOC. The equipment described in section 2.2 above was utilized and the ROV survey performed was essentially a continuation of the work from the previous season.

With the subsurface obstructions located during the Phase I hydrographic and side scan sonar surveys and Phase II ROV fall 2006 survey, OCC was able to deploy the transponders (anchored to buoys) in a configuration with little to no interruption in signal. However, several small setups were required to fully cover the area of concern without interference. OCC utilized the hydrographic survey and results of the fall 2006 survey as the base map for this phase of the survey in the ROV tracking software rather than the aerial photograph previously used.

In addition to the ROV survey, OCC probed the river bottom to determine the thickness of the coal tar in select areas using steel rods. OCC found the weight of the steel rod easily penetrated through the tar and silt deposits. However, the tar adhered to the rod whereas the silt did not. OCC recorded the probe activity using the ROV camera and then measured the thickness of the tar stuck to the rod once pulled to the surface. The contaminated steel was collected and properly disposed of at the upland containment area.

3.0 FINDINGS

3.1 PHASE II: ROV SURVEY FALL 2006

The initial transponder setup on November 30th was in the southern portion of the AOC as shown in Figure 1. The ROV was deployed and a path was tracked (gray/black circles) as shown on Figure 2. OCC encountered the remains of two (2) rock-filled timber crib structures, as depicted on Figure 2 by the green targets, and in Photographs 1 and 2. The river current was too strong to maneuver the ROV in tight transects perpendicular to shore as anticipated. After a brief period, the ROV was removed from the water and adjusted with weights in an attempt to counteract the current. The results of this first survey are shown in Table 1 below. The table provides the approximate coordinates (New York East State Plane in meters, accuracy ± 1 meter) of targets shown on the figures, as well as the DVD number, corresponding time on DVD and photo numbers. Please note that the time on DVD corresponds to time on DVD playback device and not to the time shown on the ROV screen. The time shown on the ROV screen is time of day that the survey took place.

Table 1: Fall 2006 ROV Survey 1

DVD #	1				
Figure #	1 & 2				
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo/Point #[1]**
1	2:35	496795	219484	timber crib structure	1
2	4:19	496803	219490	timber crib structure	2

The ROV was redeployed in the same location for survey 2. Additional timber structures were encountered, but little else. ROV Survey 2 extended onto two (2) DVDs. The results are shown in Tables 2 and 3 below. It was believed that the current survey area did not show evidence of coal tar so the transponders were removed and relocated to the north end of the AOC at the request of the NYSDEC. Upon further review of the video in the office, it appears there may have been coal tar present where it was originally believed to be rock (Table 3). However, it is not as easily discernable as the other contaminated areas later viewed.

Table 2: Fall 2006 ROV Survey 2 (part 1)

DVD #	2				
Figure #	3 & 4				
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo/Point #**
1	5:23	496804	219485	timber crib structure	3
2	9:58	496797	219494	timber crib structure	4
3	45:22	496787	219495	timber crib structure	5
4	47:40	496771	219481	timber crib structure	6

Table 3: Fall 2006 ROV Survey 2 (part 2)

DVD #	3				
Figure #	3 & 4				
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo/Point #**
0:57	0:57	496820	219476	rocky bottom/ possible coal tar	7
8:23	8:23	496792	219491	rocky bottom/ possible coal tar	8

OCC detected a large area of shiny black, semi-viscous substance, believed to be coal tar, on the river bottom in the area at the north end of the AOC (Figures 5 and 6). Table 4 below provides the locations of these deposits.

[1] Point numbers are shown on OCC Drawing # 205099-05-01

Table 4: Fall 2006 ROV Survey 3

DVD #	4				
Figure #	5 & 6				
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo/Point #**
1	6:50	496886	219487	coal tar deposit	9
2	7:30	496888	219483	coal tar deposit	10
3	8:50	496887	219488	coal tar deposit	11
4	15:30	496876	219493	timber debris	12
5	19:40	496879	219486	coal tar deposit	13
6	21:00	496881	219485	coal tar deposit	14
7	21:45	496882	219485	coal tar deposit	15
8	23:25	496880	219481	coal tar deposit	16
9	24:50	496880	219491	coal tar deposit	17
10	28:20	496890	219488	coal tar deposit	18
11	29:19	496890	219493	coal tar deposit	19
12	32:30	496894	219498	coal tar deposit	20
13	42:50	496903	219497	coal tar deposit	21
14	44:30	496895	219492	coal tar deposit	22
15	56:00	496883	219489	coal tar deposit	23

After reviewing this area, OCC relocated the survey area to the middle portion of the AOC. A deposit of coal tar was pulled up with the boat anchor. OCC collected a sample and the remaining coal tar was bagged and deposited into the roll-off containers at the site. The final survey area is depicted in Figures 7 and 8. Additional coal tar deposits were discovered there as shown in Table 5 below.

Table 5: Fall 2006 ROV Survey 4

DVD #	5				
Figure #	7 & 8				
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo/Point #**
1	10:06	496856	219487	coal tar deposit	24
2	29:01	496885	219486	coal tar deposit	25
3	30:30	496888	219488	coal tar deposit	26
4	35:30	496891	219485	coal tar deposit	27
5	38:23	496889	219502	coal tar deposit	28
6	39:14	496888	219509	coal tar deposit	29
7	41:35	496899	219505	coal tar deposit	30
8	42:23	496894	219507	coal tar deposit	31
9	43:14	496897	219510	coal tar deposit	32
10	43:47	496898	219507	timber crib structure	33
11	44:08	496900	219508	coal tar deposit	34

3.2 PHASE II: ROV SURVEY SPRING 2007

The first setup on June 5th was located at the northern portion of the AOC where heavy concentrations of coal tar were found during the fall 2006 survey (Figures 9 and 10). OCC located an area of contamination with the ROV and then followed it on/offshore and

up/downstream to determine the limits, placing annotations on the survey where contamination was found and potential limits determined. The results of this first survey are shown in Table 6 below. Survey 2 was conducted from the same initial setup. The tables below provide the approximate coordinates (New York East State Plane in meters, accuracy ± 1 meter) of targets shown on the figures, as well as the DVD number, corresponding time on DVD and photo numbers.

Table 6: Spring 2007 ROV Survey 1

DVD #	1					
Figure #	9 & 10					
Annotation	Time on DVD	Northing	Easting	Comment	Photo #	Point #[2]
9.33	9.33	496889	219503	coal tar deposit	35	1
12:17	12:17	496897	219509	timber crib structure	36	2

Table 7: Spring 2007 ROV Survey 2

DVD #	2					
Figure #	11 & 12					
Annotation	Time on DVD	Northing	Easting	Comment	Photo #	Point #
10:30	10:30	496883	219510	coal tar deposit	37	3
11:50	11:50	496883	219511	coal tar deposit	38	4
12:19	12:19	496884	219512	coal tar deposit	39	5
15:20	15:20	496884	219512	coal tar deposit	40	6
38:52	38:52	496888	219510	coal tar deposit	41	7
44:32	44:32	496887	219517	coal tar deposit	42	8
46:05	46:05	496886	219515	coal tar deposit	43	9

On June 6th, the transponders were set in a grid toward the middle of the AOC, just north of the existing outfall pipe and the survey was continued. Points of interest were recorded as shown in Table 8 below and annotated on the survey map as depicted on Figures 13 and 14. Survey 4 (Table 9) was a continuation of Survey 3.

Table 8: Spring 2007 ROV Survey 3

DVD #	3					
Figure #	13 & 14					
Annotation	Time on DVD	Northing	Easting	Comment	Photo #	Point #
?	4:10	496832	219483	possible limit of coal tar	44	10
7:17	7:17	496838	219471	coal tar deposit	45	11
11:32	11:32	496843	219474	coal tar deposit	46	12
16:15	16:15	496853	219471	coal tar deposit	47	13
19:40	19:40	496856	219468	coal tar deposit/possible limit of coal tar	48	14
20:20	20:20	496857	219469	coal tar deposit/possible limit	49	15

[2] Point numbers for spring 2007 surveys are shown on OCC Drawing # 205099.1-01-02

				of coal tar		
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
24:33	24:33	496842	219472	coal tar deposit	50	16
25:30	25:30	496841	219469	coal tar deposit	51	17
25:54	25:54	496841	219469	concrete debris	52	18
27:13	27:13	496842	219465	possible limit of coal tar	53	19
30:05	30:05	496839	219464	possible limit of coal tar	54	20
34:20	34:20	496834	219468	coal tar deposit	55	21
36:08	36:08	496837	219469	coal tar deposit	56	22
36:47	36:47	496835	219471	coal tar deposit	57	23
1:04:49	1:04:49	496863	219479	possible limit of coal tar	58	24
?	1:12:56	496859	219487	possible coal tar deposit	59	25
1:13:37	1:13:37	496861	219485	coal tar deposit	60	26

Table 9: Spring 2007 ROV Survey 4

DVD #	4
Figure #	15 & 16

Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
0:05	0:05	496850	219468	possible limit of coal tar	61	27
3:20	3:20	496850	219479	coal tar deposit	62	28
4:36	4:36	496851	219481	possible limit of coal tar	63	29
17:52	17:52	496847	219480	coal tar deposit	64	30
20:20	20:20	496846	219479	coal tar deposit	65	31
21:09	21:09	496845	219481	coal tar deposit	66	32
44:05	44:05	496852	219499	possible limit of coal tar	67	33
44:56	44:56	496852	219499	coal tar deposit	68	34
1:02:20	1:02:20	496861	219485	coal tar deposit	69	35
1:02:55	1:02:55	496861	219482	coal tar deposit	70	36
1:17:33	1:17:33	496876	219501	coal tar deposit	71	37
1:18:15	1:18:15	496877	219503	coal tar deposit	72	38
1:19:27	1:19:27	496880	219503	coal tar deposit	73	39
1:20:54	1:20:54	496884	219506	coal tar deposit	74	40
1:22	1:22	496889	219506	coal tar deposit	75	41
1:22:56	1:22:56	496885	219505	coal tar deposit	76	42
1:23:42	1:23:42	496881	219499	coal tar deposit	77	43
1:24:55	1:24:55	496881	219497	coal tar deposit	78	44
1:25:58	1:25:58	496881	219492	coal tar deposit	79	45

At the conclusion of Survey 4, the transponders were relocated to the northern section of the AOC to determine the western and northern extents of the coal tar located during the fall 2006 survey. Survey 5 was brief because coal tar had fouled the ROV propeller and the unit had to retrieved and cleaned prior to concluding the survey. Tables 10 and 11 below provide the locations of additional coal tar deposits found in that area from Survey 5 and 6, respectively.

Table 10: Spring 2007 ROV Survey 5

DVD #	5					
Figure #	17 & 18					
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
6:54	6:54	496897	219488	coal tar deposit	80	46

Table 11: Spring 2007 ROV Survey 6

DVD #	6					
Figure #	19 & 20					
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
1:43	1:43	496901	219495	coal tar deposit	81	47
9:01	9:01	496905	219496	coal tar deposit	82	48
12:03	12:03	496910	219500	coal tar deposit	83	49
29:24	29:24	496909	219511	coal tar deposit	84	50
29:53	29:53	496909	219510	coal tar deposit	85	51
33:48	33:48	496905	219502	coal tar deposit	86	52
34:35	34:35	496904	219504	coal tar deposit	87	53
35:08	35:08	496905	219506	coal tar deposit	88	54
36:30	36:30	496908	219508	coal tar deposit	89	55
37:00	37:00	496910	219509	coal tar deposit/possible limit	90	56
45:54	45:54	496900	219491	possible limit of coal tar	91	57
46:22	46:22	496897	219491	coal tar deposit	92	58
46:32	46:32	496896	219490	coal tar deposit	93	59
48:21	48:21	496892	219489	coal tar deposit	94	60
1:00:40	1:00:40	496873	219494	coal tar deposit	95	61
1:03:35	1:03:35	496873	219499	coal tar deposit	96	62
1:05:50	1:05:50	496877	219499	coal tar deposit	97	63
1:07:25	1:07:25	496881	219502	coal tar deposit	98	64
1:08:20	1:08:20	496884	219505	coal tar deposit	99	65
1:09:42	1:09:42	496886	219508	coal tar deposit	100	66
1:10:29	1:10:29	496887	219508	coal tar deposit	101	67
1:11:28	1:11:28	496888	219507	coal tar deposit	102	68
1:16:30	1:16:30	496887	219502	coal tar deposit	103	69

On June 7th, OCC performed Survey 7 in the vicinity of the existing 24 inch diameter cast iron pipe. Table 12 and Figures 21 and 22 provide the target data collected during that survey.

Table 12: Spring 2007 ROV Survey 7

DVD #	7 & 8					
Figure #	21 & 22					
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
23:27	23:27	496833	219470	coal tar deposit	104	70
24:55	24:55	496836	219470	coal tar deposit	105	71
27:51	27:51	496828	219470	coal tar deposit	106	72
33:17	33:17	496832	219472	coal tar deposit	107	73
34:36	34:36	496833	219470	coal tar deposit	108	74
35:23	35:23	496833	219467	coal tar deposit	109	75
35:47	35:47	496833	219467	coal tar deposit	110	76
38:14	38:14	496825	219468	possible limit of coal tar	111	77
38:28	38:28	496825	219468	possible limit of coal tar	112	78
52:42	52:42	496823	219469	rocky bottom (not believed to be coal tar)	113	79
56:20	56:20	496823	219474	rocky bottom (not believed to be coal tar)	114	80
59:24	59:24	496824	219485	possible limit of coal tar	115	81
1:03:01	1:03:01	496830	219481	possible limit of coal tar	116	82
1:05:59	1:05:59	496828	219477	possible limit of coal tar	117	83
?	1:15:05	496840	219478	possible coal tar	118	84
1:16:45	1:16:45	496839	219474	coal tar deposit	119	85
1:21:22	1:21:22	496842	219478	coal tar deposit	120	86
H2 2:18	2:18 (DVD #8)	496851	219469	coal tar deposit	121	87
H2 3:53	3:53 (DVD #8)	496854	219471	coal tar deposit	122	88
H2 10:25	10:25 (DVD #8)	496837	219461	coal tar deposit	123	89

3.3 PROBES: SPRING 2007

OCC probed the river bottom to determine the thickness of the coal tar in a few locations using steel rods. Initial probes were taken on June 4th without ROV video recording and tracking software. Table 13 below provides the coordinates (obtained with a Trimble DGPS handheld unit) where the probes were taken and corresponding thickness of coal tar measured. Photographs were taken of the sample above water with a standard digital camera.

Table 13: Probes

Probe #	Northing	Easting	Approximate thickness of coal tar	Photo #
1	496880	219483	24 inches	124, 125, 126
2	496886	219489	14 inches	127

3	496893	219489	14 inches	128

The river bottom is rocky, and in some areas, covered in silt, which made it difficult in some locations to distinguish between natural river bottom and coal tar contamination based on visual inspection alone. Based on the probes conducted on June 4th, it was anticipated that further probing of the bottom would enable OCC to distinguish between natural substrate and coal tar. The transponders and ROV were utilized to track the location of additional probes on June 7th. The data collected is provided in Tables 14 and 15 below. Figures 23 and 24 provide tracking data and annotations for these surveys.

Table 14: Spring 2007 ROV Probe Survey

DVD #	9 & 10					
Figure #	23 & 24					
Annotation	**Time on DVD**	**Northing**	**Easting**	**Comment**	**Photo #**	**Point #**
probe 1	n/a	496835	219467	coal tar thickness approx. 6 inches	129	90
no tar	n/a	496828	219472	no coal tar in this location	n/a	91
probe 2 24:00	24:00	496829	219465	coal tar found in this location/no thickness measured	130	92
probe 3 28:30	28:30	496829	219466	coal tar thickness approx. 6 inches	131	93
no tar	n/a	496817	219477	no coal tar in this location	n/a	94
no tar	n/a	496839	219484	no coal tar in this location	n/a	95
probe 4	n/a	496842	219478	coal tar thickness approx. 10 inches	n/a	96
probe 5	n/a	496842	219472	coal tar found in this location/no thickness measured	n/a	97
no tar	n/a	496850	219473	no coal tar in this location	n/a	98
probe 6 1:10:38	1:10:38	496850	219471	coal tar found in this location/no thickness measured	132	99
tar	n/a	496857	219503	coal tar found in this location/no thickness measured	n/a	100
no tar	n/a	496861	219490	no coal tar in this location	n/a	101
no tar	n/a	496862	219485	no coal tar in this location	n/a	102
4:20	4:20 (DVD #10)	496904	219515	coal tar deposit with ROV imprint left in it	133	103
5:01	5:01 (DVD #10)	496904	219515	coal tar deposit with ROV imprint left in it	134	104
23:30	23:30 (DVD #10)	496894	219491	coal tar thickness approx. 24 inches	135	105

4.0 CONCLUSIONS

The results of the Phase II survey activities and additional probing confirmed the presence of coal tar from the Phase I survey activities and further defined the outer limits of coal tar contamination. The approximate limits of the coal tar contamination are shown in Figure 205099.1-01-01. OCC believes that the AOC was adequately covered as evidenced in Figure 25 and Figure 205099.1-01-01.

No coal tar contamination was seen to the south of the existing outfall. Likewise, little coal tar was found to the east of the man-made timber cribbing structures. It is believed that the structures may be acting as a barrier for contaminant migration. Contamination appears to be more prevalent at the north end of the AOC. The partial probing activity performed by OCC indicates that the coal tar ranges from approximately 6 inches to 24 inches in thickness with the coal tar deposits reviewed at the north end being thicker and more viscous than deposits found at the southern extent.

At the request of the NYSDEC, OCC looked for an additional outfall adjacent to the stone seawall, as it was thought that an outfall might be the source of the contaminated material. OCC searched in that area with the ROV and did not find a second outfall.

5.0 PROPOSED PHASE III ACTIVITIES

As previously discussed, the river bottom is rocky, and in some areas, covered in silt, which makes it difficult in some locations to distinguish between natural river bottom and coal tar contamination based on visual inspection alone. It is recommended that OCC perform additional field surveys to probe the river bottom in a grid pattern to further delineate limits and volumes of coal tar contamination in the area of concern. The grid will be based upon the OCC field activities described in this report. It is anticipated that probing the bottom will enable OCC to distinguish between natural substrate and coal tar. The ROV will be utilized to video the probe activity. GPS coordinates of the limits of coal tar determined will be recorded.

Additionally, it is recommended that contaminant removal tests be performed in an attempt to determine transport mechanisms. OCC proposes to supply a four man dive team to perform limited coal tar removal in select test areas. The diver will be tethered to the boat and operate utilizing surface supplied air in accordance OSHA requirements. The diver will have constant voice communication with the surface. Dive operations will follow OCC's contaminated dive procedures.

The diver will clean an approximate 3 foot by 3 foot area of visible coal tar contamination by scooping the coal tar deposit into a bag or other container. The collected coal tar will be brought to the surface for testing by others (if required) and proper disposal. The coordinates of the test area will be located using a Trimble Mobile DGPS unit. The area will be also be marked for future identification in the field using an aluminum flat bar ring to be left on the bottom.

It is anticipated that up to four (4) test areas will be cleaned: two (2) in the area where the coal tar concentration is high and appears more viscous; and two (2) where the coal tar is less viscous (appears to be older). The aluminum marker rings will be deployed using two (2) methods for each scenario described above: one ring will be a thin strip of aluminum mounted flush to the river bottom and the other will be a thick strip of aluminum (creating a barrier) mounted flush to the river bottom. It is anticipated that, if the coal tar moves back into the cleaned areas, the mode of transport may be able to be identified. If the coal tar is mobile along the river bottom, it will not penetrate into the area with a barrier and we will likely see a buildup of tar around the barrier. If coal tar is found inside the barrier, it is likely that the tar is penetrating up through the river bottom.