Operational Science Advisory Team (OSAT-2) Charter

Mission statement: OSAT-2 is charged with producing a scientific, risk-based Net Environmental Benefits Analysis (NEBA) using data collected from the oil spill associated with the Macondo 252 well, from the near shore, surf zone, and shoreline where oil impacts have occurred. The mission of this group is to inform the FOSC (via the Environmental Unit and NOAA Science Support Coordinator) in a timely manner with respect to the fate (degradation) and effects (toxicity) of oil residues remaining on, under, or near the shoreline. This specialized team within the IMT structure is a crucial link between the daily review of data, and the FOSC, ensuring that scientific support is available to inform operational decision making.

The OSAT-2 Study addresses three geomorphic areas of concern:

Part 1: Supratidal oil buried below 6" surface cleaning depth.
Hypothesis: The net environmental benefit is greatest if oil is left unrecovered.

- Question 1: Is it safe for the environment to leave oil buried in supratidal sediments?
- Question 2: Are there any human health concerns in leaving oil buried in supratidal sediments?
- Question 3: How long will it take for the buried oil in supratidal sediments to attenuate via natural processes?
- Question 4: Does net environmental benefit analysis (NEBA) justify the decision to take no further oil removal action?

Part 2: Small Surface Residue Balls (SSRBs) on mechanically-cleaned beaches.
Hypothesis: SSRBs on beaches poses low threat to humans and the environment.

- Question 1: Is it safe for the environment to have SSRB oil on mechanically-cleaned beaches?
- Question 2: Are there any human health concerns in leaving SSRBs on mechanically-cleaned beaches?

- Question 3: How long will it take for untreated SSRBs to attenuate via natural processes?
- Question 4: Does NEBA justify the decision to undertake no further oil removal action?

Part 3: Surf zone submerged oil mats

Hypothesis: The net environmental benefit is greatest if submerged oil mats are left undisturbed to weather and break up to be recovered as surface residue balls on the beach.

- Question 1: Is it safe for the environment to have submerged oil mats remain in the surf zone?
- Question 2: Are there any human health concerns in leaving submerged oil mats unrecovered?
- Question 3: How long will it take for the submerged oil mats (and associated products such as tar balls) to attenuate via natural processes?
- Question 4: Does NEBA justify the decision to undertake no further oil removal action?

Tasks

- Collate all existing DWH response commissioned shoreline sampling and weathered oil characterization studies
- Conduct literature search of GOM-related oil degradation studies
- Calibrate BIOMARUN and SEAM3D models with existing time series data in order to predict attenuation.
- Conduct laboratory solubility tests on oil as a bioavailability surrogate for correlating oil chemistry with eco-toxicity.
- Consider microcosm studies to evaluate the maximum potential biodegradability of the oil.

Outcome

Prepare a risk-based NEBA for the IC which supports action/no-action decision making.

Authority and Responsibility

The OSAT-2 is an ad hoc group of agency representatives whose skill sets are tailored to the specific concerns of the Deepwater Horizon response command. All activities are under the Coast Guard's Federal On-Scene

Coordinator's direction and authorities. OSAT-2 acts as an advisory board, providing a cross-agency perspective based on near real-time analysis of data to inform operational decision making.

Personnel

To provide prompt, succinct and substantive recommendations to the SSC, the team shall include expertise in these areas:

1. Microbiology
2. Ecotoxicology
3. Natural attenuation processes, especially microbial degradation rates and community characteristics
4. Groundwater geochemistry
5. Coastal geomorphology
6. Human health and ecological risk assessment
7. Scientific research, geographical information systems and database management.

Composition

Six scientific specialties are needed to coordinate daily analysis of data, trends, and other considerations. Specialties have been further matched to agencies to provide the expertise needed to quickly and efficiently process the data.

- General Environmental Science and Policy – US Coast Guard, Lead
- Ecology and NEBA – NOAA
- Risk assessment, oil/containment chemistry, database research – BP
- Ground water geochemistry, hydrocarbon weathering and microbiology – USGS
- Marine Ecology – BOEMRE
- Environmental chemistry/ecotoxicology – EPA
- Ecology – FWS/NPS

OSAT-2 is also supported by a staff from the US Coast Guard (administrative support and coordination) and data management specialists working under the auspices of NOAA and USGS.

Operation and Business Rules

Because of the expected short duration of this specific tasking, ideally agencies should rotate deployments to the OSAT-2 between two people, operating on a 14 day or longer basis. Both staff members regularly rotating

to fill an OSAT-2 seat will receive correspondence and materials pertaining to OSAT-2 work and deliberations. Team members should plan for a rotation cycle that provides one full working day of overlap with their alternate to ensure adequate continuity. Notice should be provided by the agency, through their member, when a new staff person is rotating into the cycle, so that these guidelines as well as past products and the meeting schedule can be sent to the new member. Members who are on a regular rotation will be kept informed of OSAT-2 decisions and products, but will not be involved in actual deliberations. Staff that report to the GC-IMT to provide short term agency coverage (duration less than two weeks) will not be included on the distribution list on an ongoing basis. To produce the required products (described above) and to undertake other work that may be required in support of the Environmental Unity, OSAT-2 typically meets once per day irrespective of weekends or holidays.

The goal of this team is to develop timely, clear support to the removal decision pertaining to the areas of concern described above. In keeping with this goal only one person may represent each agency in normal OSAT-2 meetings. In most cases, OSAT-2 actions will be developed and advanced based on consensus. However, for formal OSAT-2 recommendations or in the event that consensus cannot be achieved, a roll call vote of OSAT-2 members in attendance will be determinative. Dissenting views will be noted in any final decision documents. In the event that a vote of the members in attendance results in a tie, the matter will be decided by the SSC.

No central server-based architecture currently exists to support OSAT-2's work. To maintain continuity, members access master documents on the GC-IMT Sharepoint web site. A lead author will be identified to coordinate early comments, recommendations and edits from the OSAT-2 members. The lead author will periodically transmit an edited copy of the working documents to support staff, who will update the master document. In such a manner, new members and members wishing to check on a particular project can access the most current version of the documents and a concise summary or after action report will be provided to the support staff prior to departure.

Advisors to OSAT-2

Four groups shall assist OSAT-2:

- Environmental Unit: one or more liaisons from the Environmental Unit may be requested to act in an advisory position, to relate any concerns from and ensure adequate continuity with the SSC and the Environmental Unit.
- Technical Experts: may be called upon (regardless of their affiliation) to discuss particular questions before OSAT-2
- Joint Analysis Group (JAG): The JAG can be involved in an advisory role to OSAT-2, answering any technical and technology questions. This will primarily occur through phone calls in an informal manner. The JAG may appoint an onsite representative to advise OSAT-2.
- Human Health: the National Parks Service will identify an advisor to comment on progress towards decision points, as well as for consultation.

Required OSAT-2 Products

OSAT-2 will provide memoranda to the IC upon reaching conclusions requiring approval. Other products will be organized as follows:

- Findings: Organized by project, only referring to data collected in the days since the previous report.
- Mission Guidance: Map-based product with general sampling areas needed to fill gaps, and/or sites to resample. Requirement of type of sampling noted.
- Protocol: Any sampling protocols that need to change.
- White Papers: The final product of the OSAT-2 activity is to provide three white papers addressing the hypotheses listed above. These papers will address the questions for each geomorphological area to inform FOSC decision making.

Resources

NOAA is assembling toxicological data collected by BP, USGS, EPA R4, and EPA R6. Other data may be considered. The data collected will be added to the Environmental Response Management Application (ERMA) tool, a mapping program that provides spatial reference and metadata for the compiled information. In addition, the Joint Advisory Group remains established and available to address special topics that may be outside the scope of OSAT-2.

Review of Products

OSAT-2 final products shall be reviewed by stakeholders who will be impacted by the findings. These are to include: Environment Unit Leader, Scientific Support Coordinator, DOI Trustee, State Trustees, SCAT Team Leader, and Operations Section Chief.

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